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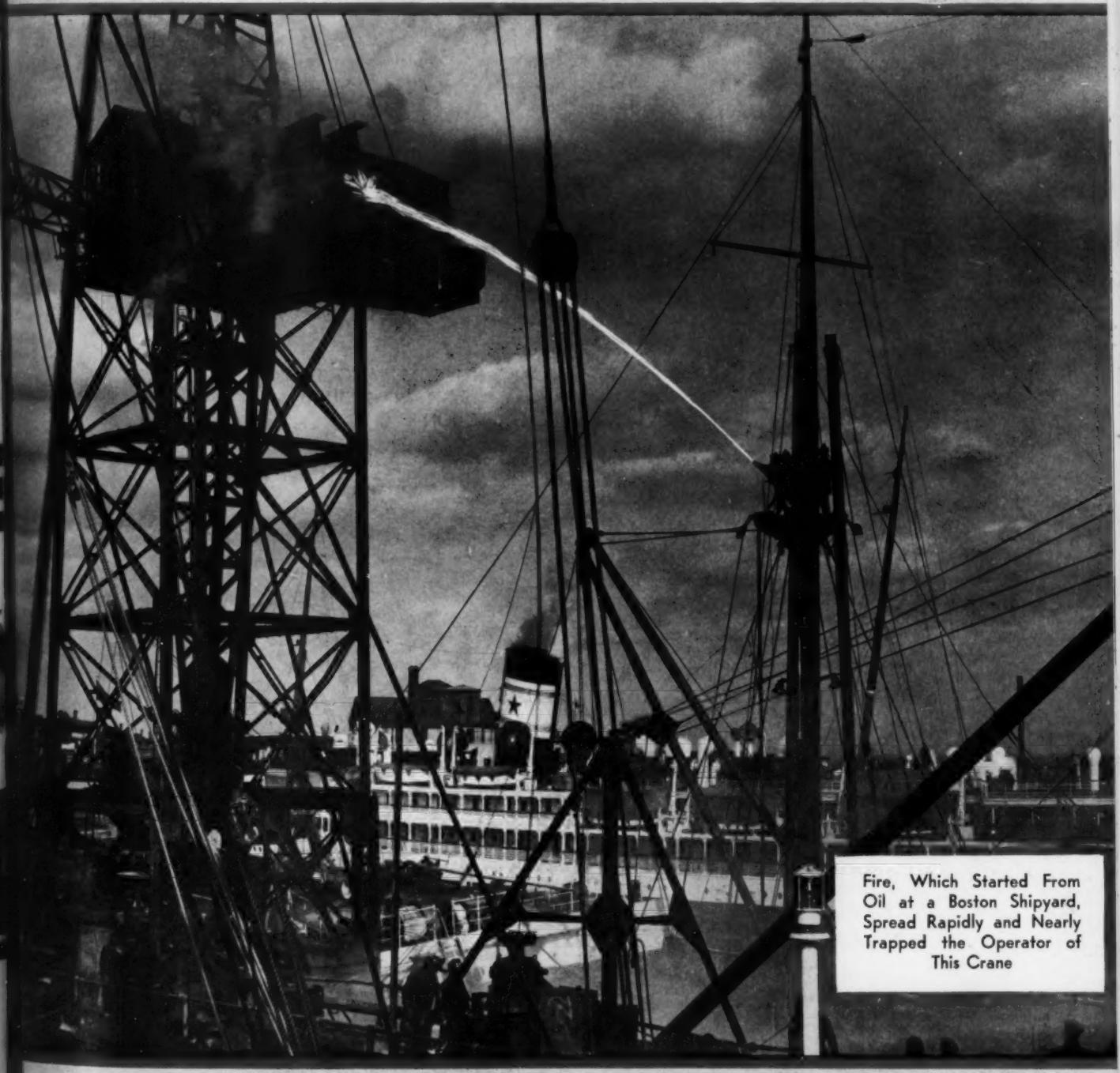
FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

Vol. 90, No. 5 MAY, 1937 Member A.B.C.-A.B.P.

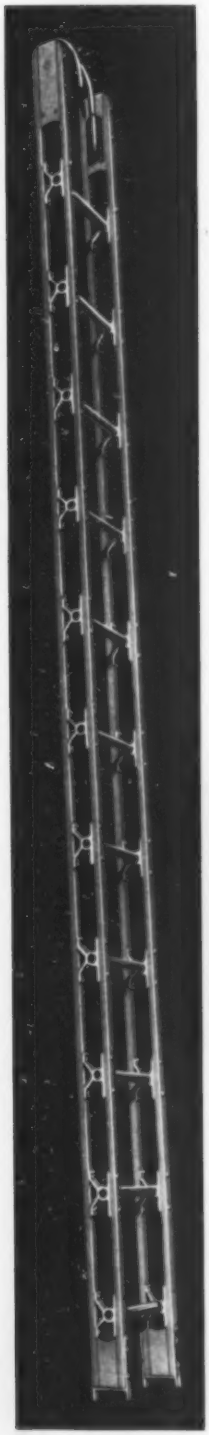


Fire, Which Started From Oil at a Boston Shipyard, Spread Rapidly and Nearly Trapped the Operator of This Crane

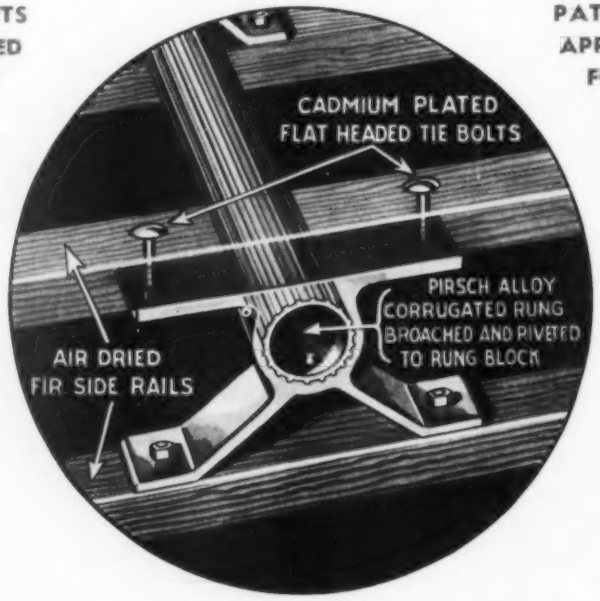
ANNOUNCING NEW LADDER DESIGN

TWO NEW LADDERS

THE INSULATED WOOD-METAL LADDER

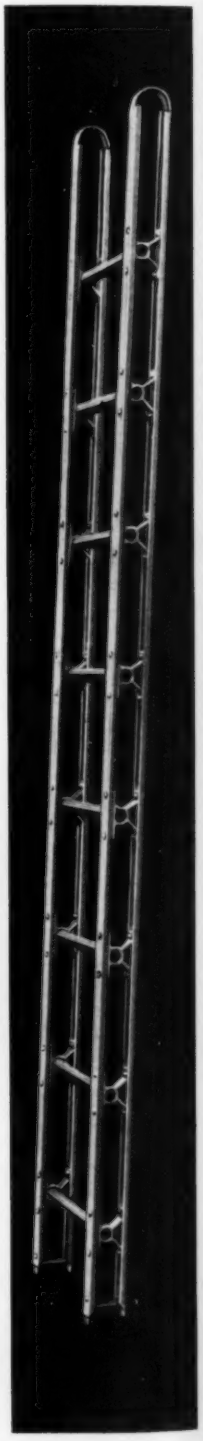


PATENTS APPLIED FOR


CADMIUM PLATED FLAT HEADED TIE BOLTS
PIRSCH ALLOY CORRUGATED RUNG BROACHED AND RIVETED TO RUNG BLOCK
AIR DRIED FIR SIDE RAILS

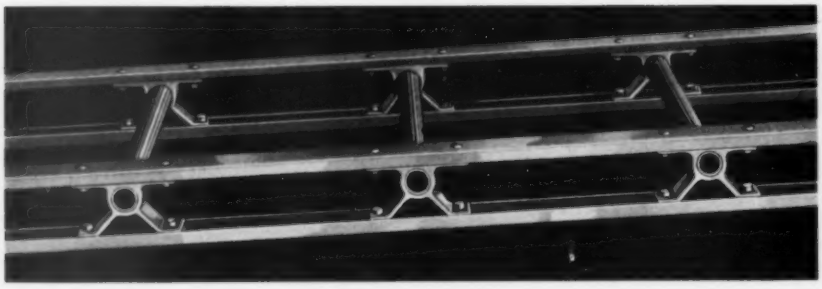
PATENTS APPLIED FOR

THE ALL METAL LADDER



PIRSCH AGAIN FORGES AHEAD WITH SOMETHING NEW — THIS TIME WITH ADVANCED DESIGN IN GROUND LADDER CONSTRUCTION

SECTION SHOWING ALL-METAL LADDER



SIDE RAILS, RUNGS AND RUNG BLOCKS OF PIRSCH ALLOY

THIS NEW DESIGN OFFERS GREATER STRENGTH, LIGHTNESS, SAFETY AND LONGER LIFE

PIRSCH FIRE LADDERS ARE BACKED BY 40 YEARS LADDER MANUFACTURING EXPERIENCE

WRITE

PETER PIRSCH & SONS CO.

KENOSHA, WISC.

FIRE ENGINEERING, May, 1937, Vol. 90, No. 5. Published monthly by Case-Shepperd-Mann Publishing Corporation, 24 W. 40th St., New York, N. Y. Subscription price: U. S. and Canada, $2.00 a year; foreign, $3; single copies, 25c. Entered as second class matter April 15, 1929, at the Post Office at New York, N. Y., under the Act of March 3, 1879.

NEW YORK CITY *again Votes for* MACK

One of the new Mack Type 21 high-pressure pumpers being delivered to New York City. Besides meeting the unusually high specifications demanded, this Mack has several new and radical departures. For instance, it is the first time that an inclosed cab has been incorporated into New York City fire-fighting equipment.

Mack

THE largest order for high-pressure pumping engines ever placed by the City of New York was last year awarded to Mack. Again, in 1937, New York orders 19 new Mack type 21 pumpers . . . another tribute to Mack's 26-year-old reputation for building the finest in fire apparatus.

These Mack pumpers completely answer exacting demands of New York City —the most stringent requirements in America. This Mack apparatus will produce 1,000 gallons per minute, at a pressure of 160 lbs. per square inch—a rating well above the standards set up by the National Bureau of Fire Underwriters.

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FIRE Stopped

EVERYWHERE WITH SMITH

INDIAN FIRE PUMPS

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FOR FOREST, BRUSH, GRASS, SPOT FIRES

Into every nook and corner go the **INDIAN** fire fighters. Each man directs a powerful stream of clear water that smothers the blaze instantly. Pumps are quickly refilled on the fire line. Curved tanks fit their backs comfortably. Special ventilation feature prevents dampness seeping through against wearer's back. Write for details, prices.

HEADLINE news: **INDIAN FIRE PUMPS** do it again. No wonder chiefs all over the U. S. call them the best all 'round fire fighters they have. Spring grass fires will soon be flaring up. Are you ready for them? Ready means an adequate supply of **INDIANS**. You can do twice the work in half the time with these tried and proven pumps.. Let us send you our new catalog in full color describing the complete line.

FEATURES

Heavy galvanized 5 gallon tank. Large brass filler opening. Strong hose. Adjustable carrying straps. Soild brass pump throws 50 foot stream. No delicate parts to wear out or give trouble. Highly recommended by fire fighting officials.

Anyone connected with Fire Prevention or Control should be familiar with INDIAN FIRE PUMPS. Write today for full details.

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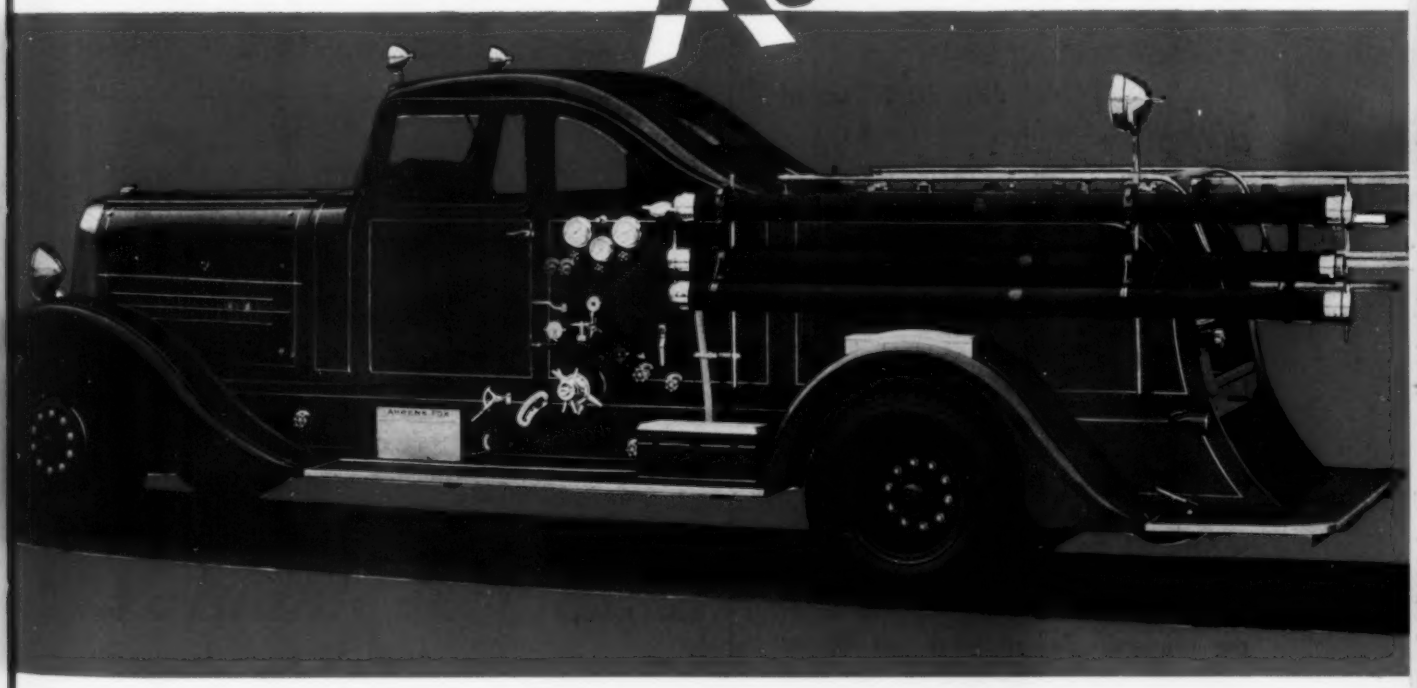
★ Fire Apparatus is not built with Red Paint!



Every man in the Fire Service deserves the best equipment which can be provided. The purchase of make-shift apparatus is not only unfair to the Department personnel, but it is the poorest economy, and a hazard to life and property.

Ahrens-Fox Apparatus is designed and built by men who know the needs of the service—Fire-Automotive engineers who honestly construct sturdy apparatus, correctly engineered and amply powered for the job of extinguishing fires in the communities they are selected to serve.

Make your recommendation for an AHRENS-FOX—MODERN APPARATUS FOR MODERN FIREFIGHTING.

Write for detailed information—today!

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AHRENS-FOX BUILDS EVERY TYPE OF PUMP FOR EVERY KIND OF SERVICE

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and THE FIRE ENGINEER

FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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Associate Editor

FRED SHEPPERD
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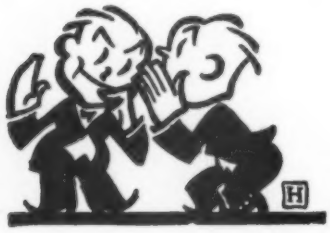

We Enjoy Listening

WRITES Chief John D. Miller, of Davis, Calif.:

"The article in April FIRE ENGINEERING by T. Alfred Fleming on 'How the Community Can Help the Fire Department' is the best I have ever read. Congratulations to both you and Mr. Fleming."

● We appreciate the kind words, Brother Miller—and thanks, too, in behalf of Mr. Fleming. Encouragement like that should make it easier for us to persuade Mr. Fleming to write for FIRE ENGINEERING more frequently.

● After all, our editors, in planning what to publish, can have no better guidance than the comments and suggestions of our readers. Tell us what you like or what you don't like—we'll do our level best to give you what you want.

The Publishers

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CONGRATULATIONS, CHIEF! HOW DID YOU EVER GET THAT FIRE OUT SO QUICKLY
WELL, THERE'S A LOT IN KNOWING HOW.- BUT THAT NEW LIGHT GOODRICH HOSE HELPED US SOME

Valuable seconds saved with this new hose

Fire departments can be at their best; Highflex hose is 18% lighter; positively no loss in strength; flow of water is increased

DO YOU want to make your department more efficient? Do you want faster fire-fighting, fewer seconds lost before water reaches a fire? Cut down weights carried. Use this new Goodrich hose.

Goodrich designed a new cord for weaving into hose jackets, a small, light, flexible, whiplash-type cord. Jackets made of it are thinner, more pliable, yet equal in bursting strength to the heaviest hose on the market.

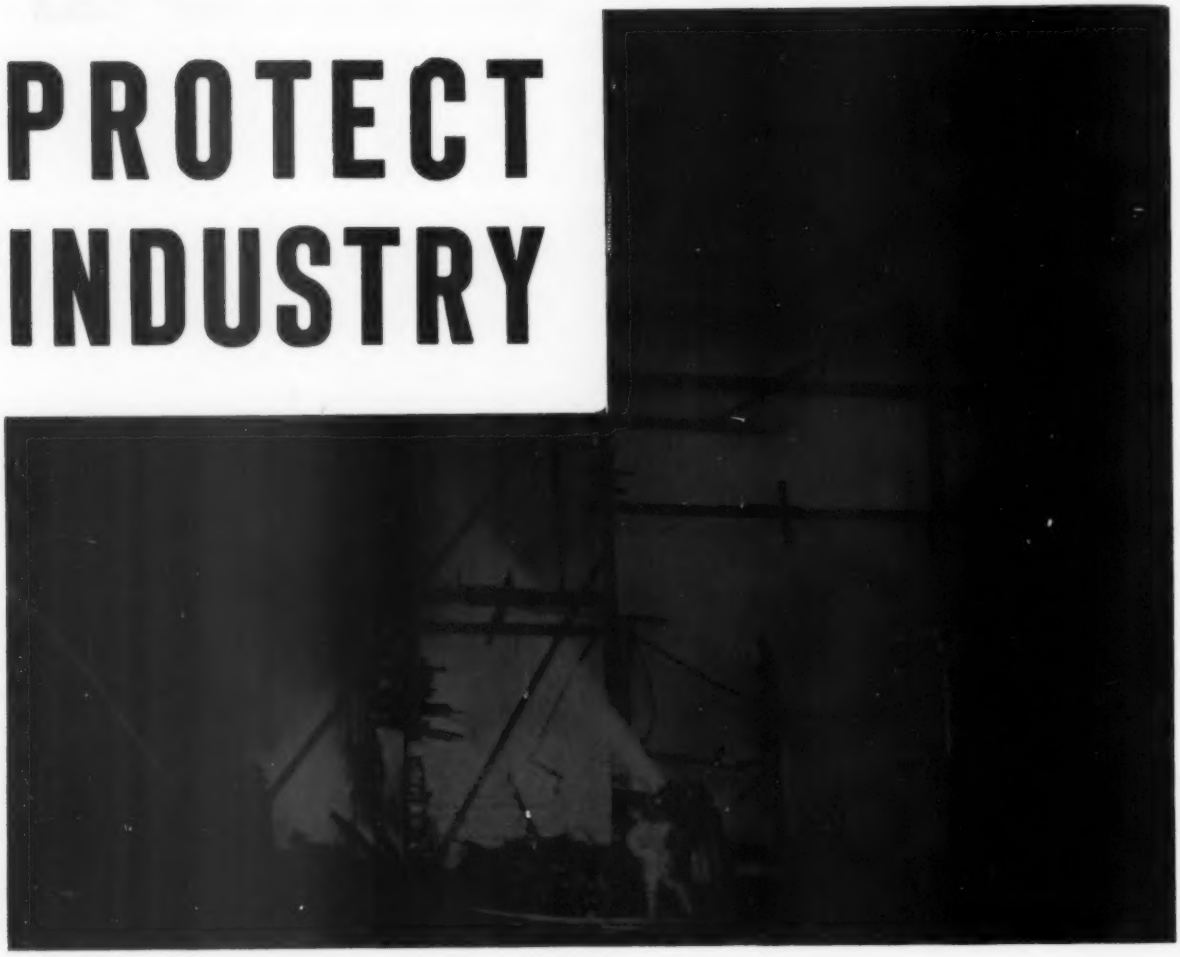
One city recently sent numbered samples of many brands of hose, without names, to an independent testing laboratory for comparative analysis. Highflex was selected as best, safest, most economical. The lightness and ease of handling were *extra, free* advantages.

Highflex has other advantages, too: Patented "end protection" to protect it from injury at the couplings; special backing between rubber and fabric to keep a smooth inner wall; close weave to protect the filler cords from abrasive wear. (No twill weave, basket weave or other "open" type of weave are used in *any* grades of Goodrich hose.)

This is *the* modern hose, the hose you need in order to have your department up to date and truly well equipped. Why not write today for full information? Purchases now save money in the long run. Give us names of interested people, and we'll gladly see they are fully informed. The B. F. Goodrich Co., Akron, Ohio.

The new Highflex fire hose—by **Goodrich**

PROTECT INDUSTRY



PROPERTY CREATED BY YEARS OF INDUSTRY IS DESTROYED BY FIRE IN AN HOUR ***as the result of only a slight delay in sending an alarm.***

Fire is the greatest destroyer of property, and—*delay* due to inadequate facilities for transmitting alarms to the fire department is the greatest accelerator of the flames.

A reliable Fire Alarm Telegraph System with adequate box distribution protects property, gives the fire department a chance to keep losses small, and relieves the community as a whole from the responsibility for fire waste due to *Delayed Alarms.*

Surveys, plans, and estimates furnished without cost or obligation.

The Threefold Fire Alarm Box

"A Box a Block" in congested high value districts; not more than 500 feet to the nearest box in closely built residential districts; convenient to every group of buildings, manufacturing establishments, and institutions in sparsely built districts is generally a safe rule to follow.

THE GAMEWELL COMPANY

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FIRE ENGINEERING

The Journal of the Fire Protection Profession

Volume 90 MAY, 1937 No. 5

With the Editor

The Price Chiseler, a Quality Chiseler Good apparatus is cheap; poor apparatus is expensive at any price. And the Fire Department that buys the cheapest may find that it is costly to the community in the long run.

For that reason cities should be particularly wary in dealing with the chiseler who will let no one undersell him.

After all, no manufacturer can sell his product below cost, and remain in business. If the amount he receives for what he sells is reduced, he must take it out of the apparatus either by lowering the grade of materials used, or by employing poor quality workmanship. There is no other way to continue in business.

But the most damaging result of chiseling is in the effect it produces on the fire apparatus industry in general. Manufacturers who would never otherwise consider lowering quality of their products are forced by cut-throat competition to cheapen them. Thus no one gets a fair return on his labor and investment, and cities receive equipment of questionable reliability.

The fire service can do a lot toward checking the evil by offering no encouragement to the apparatus builder whose sole concern is getting orders at any price.

Discourage the irresponsible chiseler, and the builders of high grade apparatus will be able to maintain the quality of their products!

* * *

Has This Hazard Been Overlooked? Down near Abilene, Tex., an oil tank train recently piled up in a wreck. Twenty-two tank cars of petroleum oils were destroyed by fire which followed.

While the loss in this particular case, totaling $50,000, was not so huge, it might have been a different story if the wreck had occurred within the city. It is doubtful if even Chief Roe's efficient department could have handled the situation had the pile-up taken place in a built up section of the city.

Tremendous quantities of oil are being transported by railroads these days and the trend seems to be toward running trains made up entirely of oil tank cars. A derailment of such a train at a critical point might produce a staggering loss of life and property.

Is not this a hazard that deserves some serious thought on the part of those responsible for the protection of life and property within municipalities?

Fred. Sheppard

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Water Stations Extend Protection

Water and Fire Protection Facilities Made Available to Residents of Outlying Areas by Construction of Reservoirs

By ALBERT C. MELENDY

Chief of Fire Department, Nashua, N. H.

THREE years ago I had a hobby of making places where the Fire Department could obtain water, outside of the water mains. The cause of this hobby was a fire which occurred on July 3, 1934.

Lightning struck a barn on the Amherst Road near what is known as the Willows. The Department made a quick run to the scene and laid two lines of hose across the field and had two good streams playing on the buildings. Then the water in the brook gave out, and we lost all the buildings. If we had had plenty of water at the time, we could have saved the house, as it had just started to burn when we arrived.

Upon returning to the station the thought occurred to me, why not make a reservoir, where a brook flows beside the road. I brought the matter before the Board of Fire Commissioners and they thought it would be a good thing if such a reservoir could be made; but where was the money coming from to finance such a project? I talked with the Mayor and he was in favor of the plan.

Federal Funds Requested

When the ERA was established to relieve the city of some of the expense of caring for the welfare lists, a meeting was held at the City Hall. A request was sent to Washington for money to finance the construction of these reservoirs in the outlying districts of Nashua which had no fire protection. Washington officials granted a sum of money to the State of New Hampshire for building water reservoirs in Nashua.

On December 4, 1934, we made a start on what is now the best system of water reservoirs and stations in New England where water can be obtained for the extinguishment of fires.

We started with 24 men and as the time went on we gradually increased the personnel. If at the time of the starting of the project anyone had told me that we would still be working at this time, December 15, 1936, I might have been a little skeptical about the starting. But when one starts a thing of this kind there is no telling where or when the end will be. We had no knowledge of what to do or what the cost would be, but I had in my mind what I wanted to do, and a rough idea how we should proceed to construct these particular reservoirs.

Chief Albert C. Melendy

We started in at the Willows on the Amherst Road, to make our first reservoir. The brook was a good sized one at that time of the year. We had to make two dams, to carry the brook around the section we were working on by making wooden troughs, and then to pump out the water between the dams. We had to do this before we could get into the section to throw out the slit and gravel to make a place four feet deep. Each section was about fifty feet in length and when it was completed we had a reservoir two hundred feet long.

Land Easements Necessary

About this time we received word from Washington that we had to have two easements signed by the land owner permitting the city of Nashua to build these reservoirs. Mr. Clark, the City Engineer, drew up one of these papers, which was approved by the Washington officials and then we started to get the signatures of the land owners where the reservoirs were to be built. While the men were working on the Willows Reservoir, I looked up a few locations which I thought would make good places to build reservoirs, and had all the papers signed.

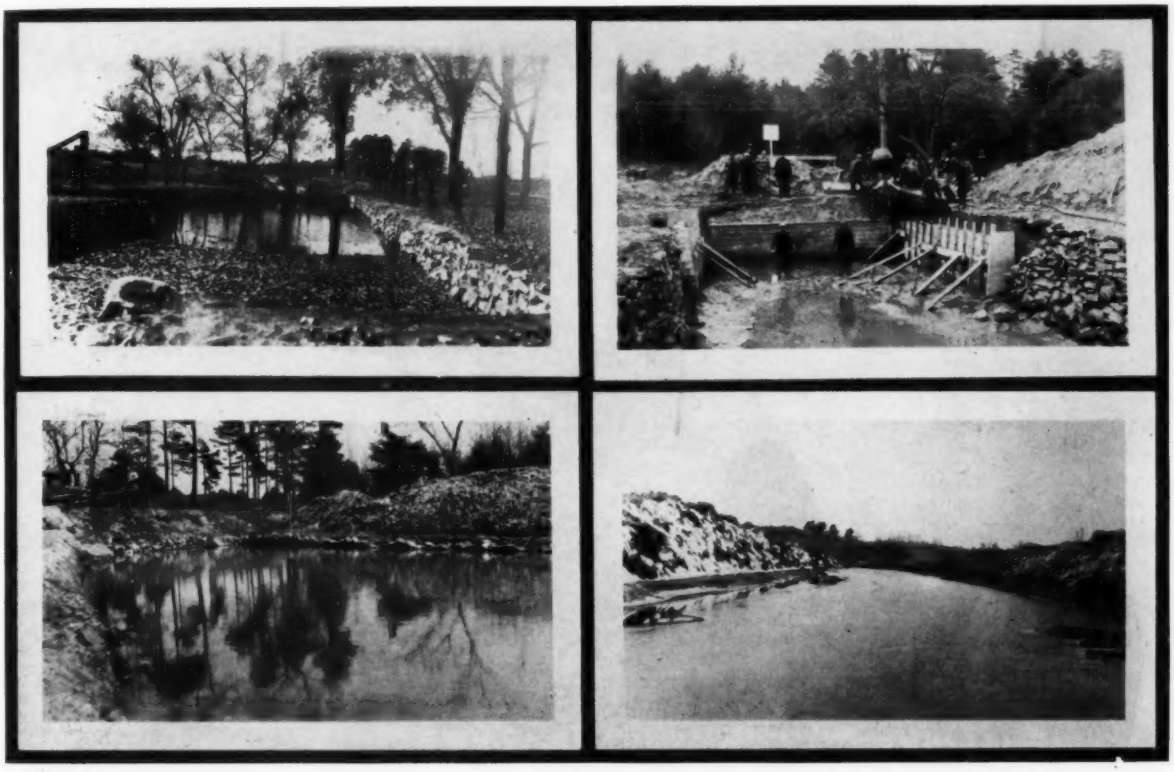
Men Supplied by ERA

The men were allowed to work 30 hours per week; the pay was $12 for a married man and a single man was permitted 15 hours per week at $6.

The ERA furnished the men with rubber boots and I purchased rubber mittens for them to keep their hands warm. By this time the mornings were as cold as 20 below zero. At 11:30 a.m. I brought hot coffee for the men, so that there was no lost time except in very stormy weather. On July 16, 1935, the ERA ended and the work was taken over by the WPA.

New papers had to be filed with WPA officials at Manchester for their approval of an allotment of money to continue the project. The sum had to be less than $25,000 and it was quite a task to determine how much would be required to finish what we had set out to do. It was not easy to determine what kind of digging would be necessary. Our estimate of man-hours included the services of two foremen, one time keeper, one superintendent of construction, two carpenters, two cement men, two stone masons and the balance laborers.

We made an estimated amount of $24,972, which has proved a very good one. After the papers were approved by the State WPA office, they were sent on to Washington. During the work on the reservoirs under the ERA I had different stages of the construction photographed. I



Four of the Reservoirs Constructed in Nashua

Left to right, upper, reservoirs at Bridge Road, and at Milford Road. Lower, the artificial storage at Pine Hill Road, and a 500,000-gallon Reservoir at Buck Mill Road.

sent some of these pictures to the WPA officials, so that they might have some conception of what we were doing with the money. Those pictures, and what the inspectors saw, made quite an impression with the officials and, when we made application for a grant of money from the WPA, it helped out very much. Our request was approved in quick time and was one of the first to be received back from Washington.

Works Under WPA

On September 16, 1935, we again started out under the WPA to finish the project. We were requested to find all the locations possible to construct these reservoirs outside of the water main district. Under the new set-up we employed 46 men, which is quite a number to keep employed. In the beginning I called all the men together and impressed upon them that if they wanted to continue under this project, I would expect them to earn their forty cents per hour and I would treat them fairly and expected the same from them.

The first of the present year we had accomplished so much and as other projects were being formed, our man power has been reduced until at the present time we have only ten men at work finishing up the project.

We have four 1,000-gallon and one 400-gallon pumpers, the latter having been just put into service, four booster hose wagons and three ladder trucks. The pumping engines and hose wagons carry 1,300 feet of 2½-inch hose and 200 feet of 1-inch hose, which makes a total of 10,400 feet of 2½-inch hose and 1,800 feet of 1-inch hose ready at all times.

Each unit has 65 gallons of water in a tank, except the 400-gallon pumper, which has a 100-gallon tank. The ladder trucks each carry 325 feet of ladders.

We have 64 stations outside of the hydrant districts by making roads and pools. Every building within the boundaries of Nashua is now accessible to water and has fire protection.

Savings Shown

The city of Nashua covers 34 square miles of territory, which is a large amount to protect, especially in the outlying districts. The cost to the city for the materials used in the construction of these reservoirs was less than $3,000. The government paid $27,522.20 for wages which amount would have had to be paid out of the taxes of the city.

This is quite a saving and at the same time a good investment and an everlasting protection to the outlying districts. My contention is that if a fire occurs in the outlying districts, and if we can save part of the buildings involved, the owners of the property will rebuild. But if all the buildings were destroyed they would not be so likely to replace them, and the city would lose in taxes.

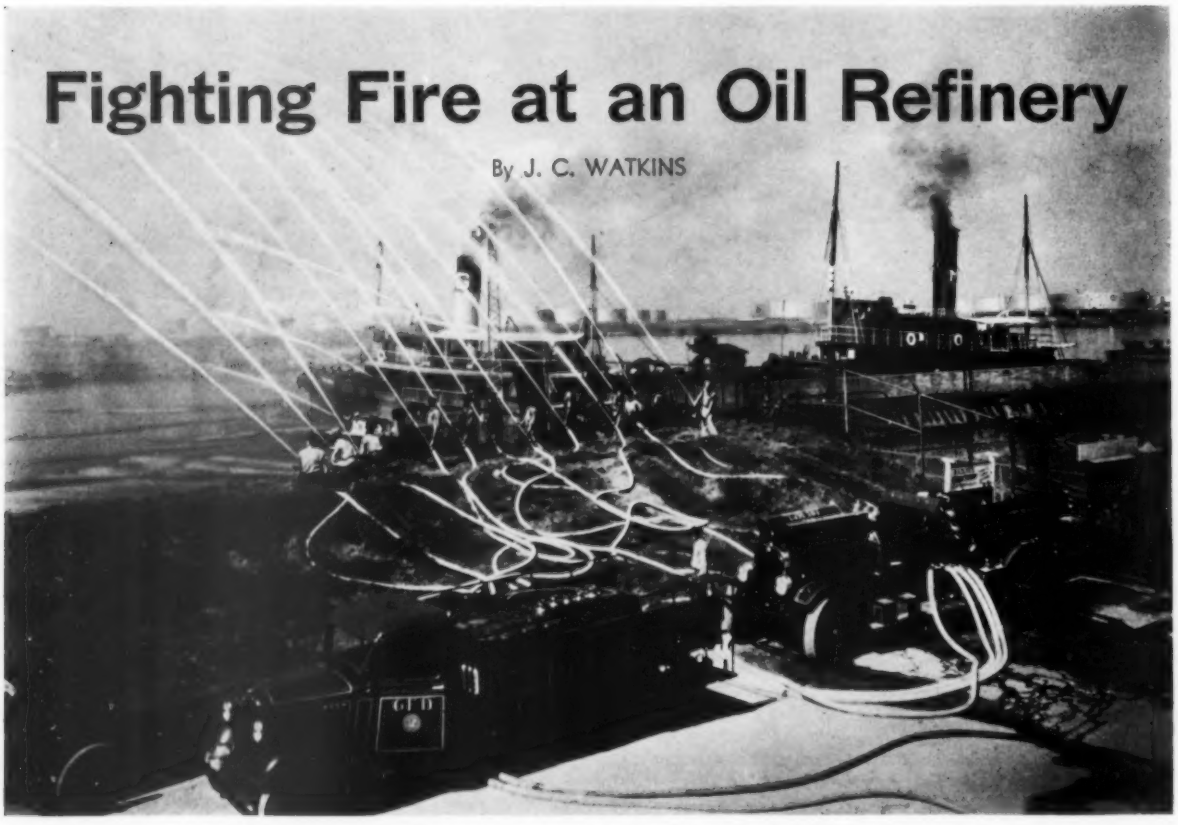
Fire Breaks Out in Mine

A section of the Kansas state prison mine at Lansing was damaged by fire on March 30. Flames were discovered in a work shack sixty feet from the bottom of the main shaft.

Chief Joseph Bowman and Fort Leavenworth firemen assisted the prison officers and inmates in fighting the fire. Air currents entering the mine were reversed to save the nineteen mules quartered in the mine. The greatest obstacle was the danger of falling slate. The heat and cold water caused large pieces of slate to break off.

Fighting Fire at an Oil Refinery

By J. C. WATKINS



Demonstrating the Available Streams from Land and Water Crews.

IN the early days of the oil industry, fires were a matter of common occurrence, and frequently of disastrous effect—at petroleum refining plants. Today, however, due to the "safety first methods" and the development of practices of fire prevention and extinguishing, fire has been reduced to a rarity, and when it does break out, can be checked usually before material damage has been done.

Methods of fire prevention and fighting at a typical oil refinery might be considered as an example. The Gulf Oil Corporation maintains at Port Arthur, Tex., what is acknowledged to be the largest oil refinery in the world, with a capacity of 125,000 barrels a day. Some 4,500 persons work in this plant.

Every factor that might contribute to the safety of employees is emphasized. Workmen and visitors entering the extensive system of docks and loading lines must sign pledges that they are not carrying "strike-anywhere" matches. Hose couplings or tools are made of brass or other non-sparking materials.

As many as nine tankers can be loaded simultaneously through the elaborate pumping system along Gulf's 3,000 feet of concrete wharf. With thousands of gallons of gasoline and oil flowing through this system, every precaution must be taken. Before ship tanks are connected with the flexible hose, the vessels are carefully grounded electrically to the dock with a special cable, thus discharging harmlessly any static electrical charges that may exist in the rigging.

An alarm system has been installed which will shut off all electrically operated pumps and notify operators of an accident. A flip of a lever by a deckman or a dock foreman, and main power switches are automatically opened. A gong warns pumpmen, and cargoing cannot be continued without orders from the dockmaster.

Such warnings are recorded at the power plant, and electricians immediately set the system for another alarm. Each alarm box is numbered, and the location of the alarm is recorded.

In case an accident should result in fire, equipment would be instantly available to smother the fire by applying foam.

Every one of the refinery's 2,000 storage tanks is similarly protected, the chemicals for the foam being supplied through 150 miles of pipe, with connections giving access to stills, cracking units, and other places.

Seven pump houses with a combined capacity of 4,230 gallons per minute are used to transport the fire extinguishing material from reservoirs containing over 1,000,000 gallons, officials explain.

In addition to this protection, the plant has modern water and chemical trucks with trained crews to handle them, as well as 500 fire hydrants on the 24 miles of high pressure lines, 72 chemical engines, 765 large port-table extinguishers, many smaller extinguishers, and sprinkler systems.

A similar arrangement of fire equipment can be found at any of the other large oil refineries in the Port Arthur area today, including the plants of The Texas Company, The Atlantic Refining Company and the Pure Oil Company.

Moreover, the men themselves are trained by Bureau of Mine instructors in resuscitation, first aid and the like, so that they may be of quick service to their fellow-workers.

With a watchword of "Safety First" and an elaborate system of fire extinguishing apparatus, the modern oil refinery is many times better equipped to prevent and control fires than was its poorly protected predecessor of a previous era.

Fire Fighting in Australia

Methods and Apparatus of the Fire Brigade of Sydney, New South Wales, Under Chief Officer C. A. D. Richardson

By KERWIN MAEGRAITH*

THE metropolitan area of the Sydney, New South Wales, Australia, Fire Brigade, under the command of Chief Officer C. D. A. Richardson is controlled from the watchroom at headquarters. Thermostatical alarms are tested there daily, and the hundreds of sprinkler installations are also overhauled each week. "Relays" are installed in big city establishments. Should fire break out, the contraction or expansion of metal in these relays causes the system to send its message in code to the brigade. Immediately the code reaches the station it is translated automatically on to a tape and the exact name and address of the building alight is given. Water sprays start at the relay, and these have been known to put out fires without further assistance. As soon as the tape records a fire the keys of the building are taken from the watchroom and handed to the officer in charge of the fire.

The key system itself is a revelation. Every business owning a building in the city area hands over to the brigade its building keys in a canvas bag sealed by the managing director. These seals are never broken except in the case of fire. The watchroom at headquarters is a maze of alarms, controls, relays and microphones. The operators of this important unit are alert, well-trained men. The watchroom is a complete scientific control which has been constructed on the premises.

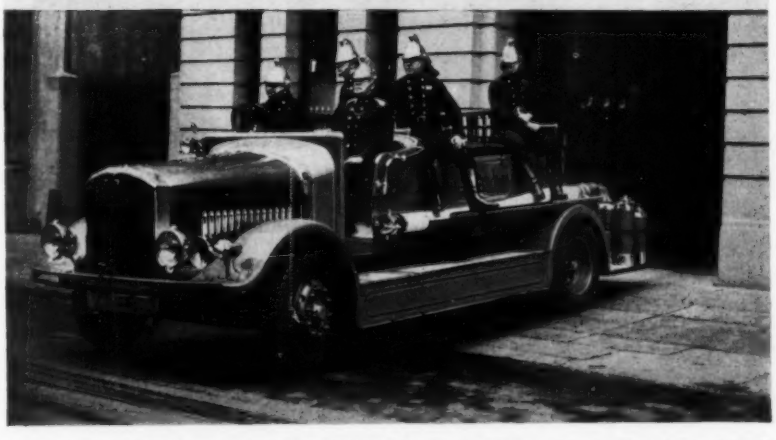
The "self-support" is one of the finest points of the New South Wales firemen. When a motor engine breaks down at Lismore, for instance, the damaged motor is sent immediately to Sydney and another engine is hurried to Lismore. Even the bodies and fittings of most of the fire-engines are made in the headquarters workshops.

The electrical shop is another hive of industry. Every bit of the fire alarm is made at the fire station.

Brigades Have Own Telephone Lines

The brigades have their own telephone lines. The P.M.G.'s Department hands the lines over the fire authorities, and these special lines are always available.

Every kind of electrical fitting that is needed can be made in the workshops. Moreover, the uniform of the fireman is tailored by the brigade tailors. By up-to-date methods the fire brigades from George Street West, Circular Quay, Darlinghurst, Pyrmont, and Paddington can be mustered at the G.P.O. in less than five minutes. The very first unit to leave headquarters is always the "Flying Squad." Immediately it leaves the station, another takes its place in the engine-room. The fire brigade is at all times prepared. The "Flying Squad" motor is always warmed up, and the firemen of its crew are at work in the engine-room fully dressed, except for their helmets, which are on the engine itself. Generally, two motors go to a fire, never less than two. If the outbreak warrants it, another running motor, turntable ladders, tenders, and other equally well-equipped motors are ready to follow at a few seconds' notice. The big American Ahrens-



Upper—"The Flying Squad" Pumping 800 Gallons Per Minute. Lower—"The Flying Squad" Leaving Station to Answer an Alarm

*Through the courtesy of Frank J. Huber, Fire Fan, Chicago, Ill. Illustrations supplied by Chief Officer Richardson, Sydney Fire Brigade.

Fox motor pump, which can pump 1,000 gallons of water per minute, stands by ready for action where big pumping capacity is necessary.

The second appliance which answers the alarm is the salvage motor.

Asbestos Suit, Which Will Withstand Great Heat

This motor carries canvas sheeting, tools, hose lengths, first-aid equipment, etc. The Chief Officer has his private car, which is painted in fireman red, like all other motors of the brigade. Tenders for gathering as many as thirty men from other stations stand by.

Miniature Motor Pumps

Novel in appearance are the miniature motor pumps, which are mounted on rubber wheels. These small pumps are used for purposes such as pumping out cellars during floods. The Fire Brigade is an emergency institution in the case of floods, as well as fires. The metropolitan area is served by 99 officers and 514 firemen of the permanent staff and 248 volunteer firemen, and the country by 67 members of the permanent staff and 1,400 volunteers. The personnel of the brigade is tabled on an indicator-board, so that officers can see at a glance exactly where each fireman is stationed at the moment. Seventy-six stations can be called through the watchroom at once. On one single day the headstation has received as many as 190 calls from fire alarms.

Every man in the brigade does some form of sporting exercise, and the example of Chief Officer Richardson is an excellent one in this direction. He recently accompanied the fire brigade's footballers to Adelaide and Melbourne. They voted him the most popular man on the trip.

Watchmen in Buildings Report Hourly to Brigade

During the whole 24 hours of the day and night watchmen from hundreds of buildings ring up the brigade to report that all is in order. In this way the safety of millions of pounds worth of property and goods is guarded.

When the fireman brings a sufferer out of the flames he does not dump the patient on the footpath. He is a highly skilled life-saver and an expert at first-aid. The two usual ways of rescuing a person from a tall building, other than by ladder, are by the jumping-sheet and by using the chair knot. The chair knot supports the body by a loop under the arms and another loop supporting the the knees. This method is used only when a rope can be attached from the top of the building. In bringing a patient down a ladder the well-known "fireman's lift" is employed.

The fireman's uniform is especially fitted to his job. The helmet protects him from heavy objects falling on him, also from molten lead, cinders, and boiling water.

A fireman's coat is never sewn on the bottom edge. If it were, the seam would hold water.

Modern scientific methods have demanded a complete knowledge of fighting gas. Firemen are drilled and exercised in the use of the proto self-contained breathing apparatus, which contains two hours' supply of oxygen. The filterer, which neutralizes gases and the smoke helmet, which is supplied with air pumped from bellows, are also used. Firemen fighting conflagrations of poison gas or smoke have two lines attached to them. One conveys fresh air through rubber tubing, and the other is the lifeline. If overcome by the fumes, a fireman can give the alarm from a klaxon horn which is attached to his gas apparatus.

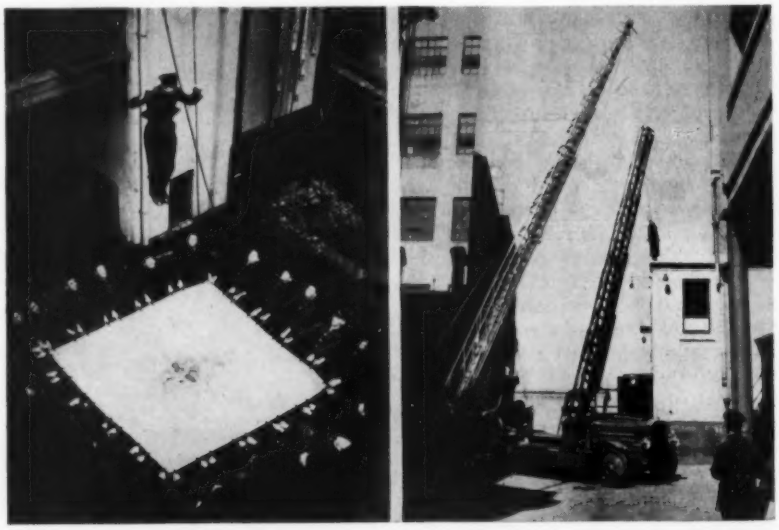
Asbestos suits and boots are used by firemen entering flames. The suits can withstand intense heat.

100-Foot Ladders Equipped with Telephones

The new 100-ft. all-steel Morris ladders, which are worked by hydraulic pressure, are the most modern in design. The complete ladders can be operated by one man and they are infallible in their work. The Morris ladders carry a crew of five men.

Even the driver of a fire engine is a fire fighter, and every man in the brigade is thoroughly trained in every department of his profession.

At the top of the new steel ladders is attached a telephone, by which a fireman can speak to his officer below and not be interrupted by the roar of the flames. The ladders are



Left—Dropping from Height of Forty Feet Into "Rescue Sheet." Right—Rescue Drill, Using an Aerial Ladder. Note Method of Supporting Person Rescued. What Appears to be a Second Apparatus is Shadow on the Building Wall

oxy-welded and made of hollow steel, and not one bolt is used in their construction. This eliminates weight. A plumb-bob is stationed at the foot of the ladders.

Siren Sounded Only Going to Fires

The right of the road is given to all fire appliances proceeding to fires, but the usual traffic restrictions are adhered to by fire engines returning from an outbreak. The siren is only sounded on the way to a fire.

Extinguishers which can be used by hand are valuable for fighting small fires. A special foam is used to extinguish rubber or inflammable liquid fires. A special foam branch is a recent addition to the equipment, for use in large fires of this variety.

"Indoor" Fire Fighting

There is one section of fire-fighting in which the New South Wales brigades have won international fame. That is in "indoor fire-fighting." Extremely great care is taken to save goods from being destroyed from fire and water. This naturally means that the firemen have to venture into the actual fire. With their heads kept low, near the floor, these plucky men venture into certain danger to cover valuable goods with canvas sheeting, and quantities of goods are often removed to the roadway. But, above all, it is life itself that the men strive to save. We have seen sad cases of their suffering quite recently.

Some of the Personnel

Sub-station officer Carr is in charge of gas warfare. Every day, in the station yard, firemen exercise in the use of gas masks. The fire brigade would be of great value to the community in the case of an air-raid.

The Deputy Chief Officer, W. H. Beare, is a popular man. He owes his life to the fact that his head was kept near the floor in a burning building in Kippax Street. On that occasion he was overcome by fumes and heat.

Mr. Barber was the organizing force behind the forming of the fire brigade's band. Under Mr. Pheloung, the band is a great attraction, especially on Demonstration Day at Castlereagh Street.

Inspector Coglan is the officer usually in charge of demonstrations, and he is inspector of all motor appliances of the Brigade in New South Wales.

There are 244 fire engines of all types in New South Wales. Motor Officer A. H. Campbell supervises motors working at all large fires. Eighty-five men are at headquarters, of whom 36 are always on duty.

Blacksmith Shop for Forging and Heavy Repairs

The blacksmith's shop does all the forging and heavy repairs necessary to keep the brigade in top form, ever ready for its work. Gear wheels are manufactured and gear-cutting appliances are constantly hard at work. N. C. Lucas, principal mechanic, is in charge.

There are fifty-six miles of hose in the brigade. Fourteen small trailer pumps are in commission. There are 225 fire stations in the State. In the city alone are 87 motor fire engines. The country has 143 motor engines, and there are 149 brigades outside the city area.

The city area of the fire brigade is 264 square miles.

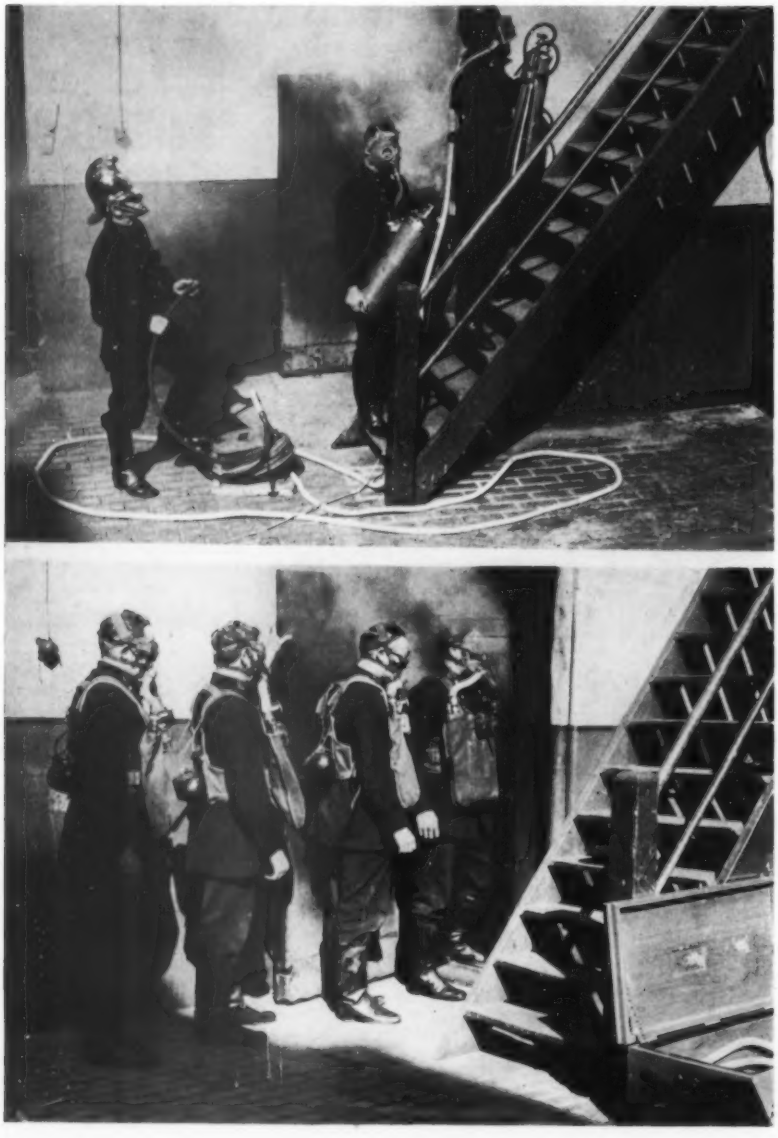
Six large turntable ladders are in commission. The helmets of the brigade here are exactly the same in design as those used by the Metropolitan Fire Brigade in London. The helmets come from England.

Upper—The Spray Branch. One Stream of Water Protects the Firemen from Heat and the Other Plays on the Fire. Lower—Using Foam to Extinguish Liquid Fires

Battery and Hose Rooms

Two other conspicuous officers are J. C. Broadhurst, who is in charge

of the electrical shop, and Mr. Moate, his assistant. The big battery-room which controls the watchroom, contains two 5-h.p. electric generators. All electrical gear is kept in a manner which is the admiration of all who see it.



Upper—Gas Mask (Central Figure) and Smoke Helmet (Right) Supplied with Air Through Bellows (Left). Lower—Firemen of Brigade, Equipped with Breathing Apparatus, About to Enter Smoke Room

In the hose-room I was told that regulaton hose of the brigade is in 60-foot lengths and 2¾-inch in diameter. Rubber-lined hose is used in the metropolitan area. In the country canvas unlined hose is used in 100-foot lengths.

There are five ranks of uncommissioned firemen—senior firemen, first, second, third, and fourth class respectively.

The height from which a jumping-sheet is used is from 60 to 20 feet. Firemen never *jump* into a rescue sheet. They step out from the wall and thus break the fall considerably. Jumping-sheet practice goes on regularly at headquarters. Sirens have replaced bells on modern engines.

I had intended to write a story of valor and of bravery. What I saw and what is pictured here is science in its modern garb. Smoke helmets, gas masks, proto respirators, streamlined motors which gather enormous speed, and wonderful steel ladders.

On the wall of the Castlereagh Street Station was a picture—one of those noble animals whose place has been taken by the machine. Most of us remember those flying steeds which rushed to the fires of not so many years ago. The horse played his part well and truly in the building-up of the hard-won tradition of the brigade.

Most men who do brave things are modest. So it is with firemen, one and all. Some of these men have outstanding records, but none of them speak of their own achievements—they speak only of "the brigade." They are all ready to do their best and take a risk in one of life's most dangerous professions. In New South Wales we have one of the world's most efficient brigades. Our fire-fighters are the equal of the London Metropolitan Fire Brigade, and there is no smarter body of men in our community. One could not speak too highly of them. They are of the highest standard in technique, and, on or off duty, are splendid specimens of manhood and good citizens.

Erie Working for 6-Day Week

Firemen of Erie, Pa., have worked out a schedule for a six-day week and have submitted it to the Safety Director for approval.

Although the six-day week for firemen has been a state statute for over a year, the firemen never received the benefit of the legislation. They were told that the financial condition of the city prevented the change.

New Mexico Firemen to Meet

The program has been arranged for the fifteenth annual convention of the New Mexico State Firemen's Association, to be held at Clayton, May 24 to 26. It will include the following talks:

"Care of Fire Hose," by Chief T. P. Treadwell, Ft. Collins, Col.

"Operation and Maintenance of Fire Department Pumpers," by Chief W. A. Westerfeld, Albuquerque, N. M.

"Modern Methods of Fighting Fires," by C. B. White, Chemist-Engineer, American-LaFrance & Foamite Industries, Elmira, N. Y.

"Electrical Inspections by Fire Departments," by V. C. Moulton, Mountain States Inspection Bureau, Denver, Col.

"Fire Department Laws," by Frank Patton, Attorney General, Santa Fe, N. M.

"Fire Department Traffic Hazards," by Clarence Goldsmith, Assistant Chief Engineer, National Board of Fire Underwriters, Chicago.

"Salvage Operations by Volunteer Departments," by Chief F. H. Beatty, Clayton, N. M.

Drill tower and hose evolutions will be in charge of Harry K. Rogers, Chicago.

The Secretary of the association is Theodore A. Rosenwald, Albuquerque, N. M.

GRENADE TYPE EXTINGUISHERS TESTED BY UNDERWRITERS' LABORATORIES

Series of Tests on the Automatic Bulb-Type (Vaporizing Liquid) Style of These Devices Gives Interesting Results

AN interesting series of fire tests in small closed rooms with automatic bulb-type carbon tetrachloride (vaporizing liquid) fire extinguishers, has been conducted by the Underwriters' Laboratories, Inc. These tests cover a period of several years. The tests were conducted by H. W. Lange, Assistant Engineer, Gases and Oils, and the report of the Laboratories also by him is as follows:

"The devices used in these tests were made in different forms but all employed carbon tetrachloride as the extinguishing medium.

"The two sketches of Fig. 1 illustrate in a general way the two styles of devices tested. One style is designed for ceiling mounting; the other to be mounted on a wall. While no test sample was exactly like either of the sketches, none of them differed in principle and application.

"The accompanying Tables 1 and 2 summarize the results of 105 fire tests of which 91 were made with extinguishers and 14 without extinguishers.

TABLE 1—Summary of Fire Tests in Small Rooms with Automatic Glass Bulb-Type Carbon Tetrachloride Fire Extingiushers

Type of Fire	Number of Tests	Test Results—Fire Extinguished	Test Results—Not Extinguished
Class A Fires with Woodwool....	15	1	14
Class B Fires with Cotton Waste	18	4	14
Class B Fires with Gasoline.....	58	16	42
	91	21	70

TABLE 2—Summary of Fire Tests in Small Rooms Without Extinguishers

Type of Fire	Number of Tests	Test Results—Fire Extinguished	Test Results—Not Extinguished
Class A Fires with Woodwool....	2	0	2
Class B Fires with Cotton Waste	4	2	2
Class B Fires with Gasoline.....	8	8	0
	14	10	4

"Descriptions of all of the tests are not given in this report; instead 23 representative fire tests with three classes of test fires are described. The three classes of fire are characterized by the kind of fuel employed as follows: 1. Woodwool excelsior (a Class A fire). 2. Gasoline-saturated cotton waste (a Class B fire). 3. Open containers of gasoline (also a Class B fire). These types of fires are regularly employed in the classification of various hand fire extinguishers.

"In addition, four tests are described, recording performances observed under duplicate test conditions except that no extinguishers were used.

"The tests were made in rooms of 1,000, 600, or 400-cu. ft. capacity. These rooms were especially built of sheet metal. The 1,000-cu. ft. room was 10 ft. x 10 ft. x 10 ft.; the smaller rooms had 9-ft. ceilings The floors were of sheet steel with sand poured over possible cracks. When completed, the structures were so tight that definite pressure was built up within them following ignition of the burning material.

"The ceiling mounted extinguishers were located in the center. The wall mounted devices were placed about 6 ft. above the floor level at the center of one side wall of the test room. Where two wall mounted devices were used for a single test, one was mounted on each opposite wall. When more than two devices were employed, they were spaced evenly about the wall dimensions.

"The test fires were located on the floor in the center of the room, unless otherwise noted in the test record. Ignition was by means of a match thrown from the door of the room which was closed immediately. Unless otherwise noted, the door and the windows were tightly closed during each test. The time recordings in the following test record are after ignition occurred.

Test Record—Woodwool Excelsior Fires

"1. 1,000-cu. ft. room, 1-qt. hammer-operated bulb, ceiling mounted. 2½-lb. excelsior spread over an area of 30 by 30 in. Extinguisher operated at 17 sec. Test discontinued after 5 min. Fuel practically all consumed but still burning.

"2. 1,000-cu. ft. room, two 1-pt. hammer-operated bulbs, wall mounted. 4-lb excelsior spread over 4-ft. diameter area on steel support, 1 ft. off floor. Fusible elements operated at 28 and 31 sec. Test discontinued at 3 min., fuel consumed. One extinguisher bulb not broken.

"3. 1,000-cu. ft. space, two 1-pt. hammer-operated bulbs, wall mounted. 8-lb. excelsior spread over 4-ft. diameter area on steel support, 1 ft. off floor. Both extinguishers operated at 36 sec. Test discontinued at 5 min., 30 sec., fuel consumed.

"4. 600-cu. ft. space 1-pt. hammer-operated bulb, ceiling mounted. 2-lb. excelsior spread over an area of 2 by 2 ft. Extinguisher operated at 35 sec. Test discontinued at 15 min., fuel consumed.

"5. 400-cu. ft. space, 1-pt. hammer-operated bulb, ceiling mounted. 2-lb. excelsior spread over an area of 2 by 2 ft. Extinguisher operated at 32 sec. Flames out at 4 min., 5 sec., diminishing glowing continued. Test discontinued at 15 min., fuel 35 per cent consumed.

"6. 400-cu. ft. space, 1-pt. hammer-operated bulb, ceiling mounted. 2-lb. excelsior spread over an area of 2 by 2 ft. Extinguisher operated 30 sec. Test discontinued at 7 min., 30 sec., when flames were out. Fuel consumed.

"7. 600-cu. ft. space, 1-pt. hammer-operated bulb, ceiling mounted. 4-lb. excelsior spread over an area of 2 by 2 ft. Extinguisher operated at 30 sec. Test discontinued at 18 min., fuel consumed.

Gasoline-Saturated Cotton Waste Fires

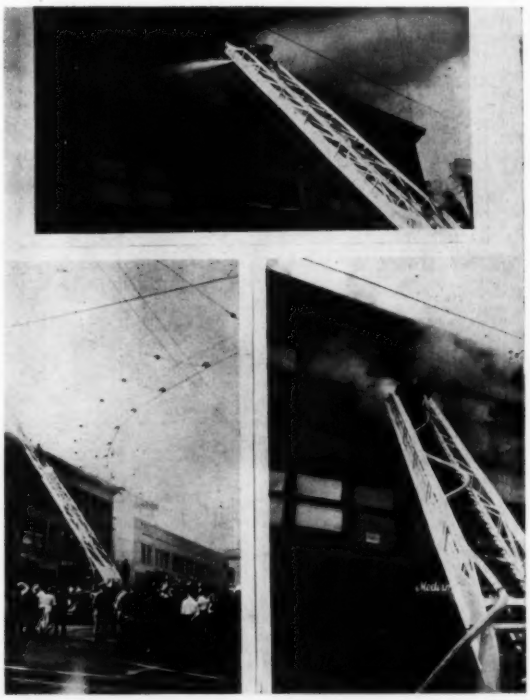
"8. 1,000-cu. ft. space, 1-pt. drop-type bulb, ceiling mounted. 8-lb. cotton waste spread over an area of 2 by 4 ft. and sprinkled with ½-gal. gasoline. Extinguisher burst in holder at 5 min., 14 sec. Flames not extinguished, test discontinued at 15 min.

"9. 1,000-cu. ft. space, 1-pt. drop-type bulb, ceiling mounted. 8-lb. cotton waste spread over an area of 2 by 4 ft. and sprinkled with ½-gal. gasoline. Extinguisher burst in holder at 3 min., 30 sec., and extinguished the flames. At 3 min., 49 sec., flames reflashed from glowing embers. Test discontinued at 6 min., fuel burning.

"10. 1,000-cu. ft. space, 1-pt. drop-type bulb, ceiling mounted. 8-lb. cotton waste spread over an area of 2 by 4 ft. and sprinkled with 1-gal. gasoline. Extinguisher burst in holder at 2 min., 28 sec., and extinguished flames. Test discontinued at 17 min. No re-ignition.

"11. 1,000-cu. ft. space. **No extinguisher.** 8-lb. cotton waste spread over an area of 2 by 4 ft and sprinkled with 1-gal. gasoline. At 1 min., 1 min. 20 sec., and 2 min. the flames were smothered over all except one small corner of the area, and each time the entire area reflashed. Test discontinued at 10 min. Fire not out.

"12. 1,000-cu. ft. space, two 1-pt. ham-



Fighting a Fire at Pasadena, Cal.

The photographs show various stages in the fight of the Pasadena, Cal., Fire Department in stopping a fire. An effective stream was directed at the flames from the 85-foot all steel Seagrave aerial ladder. Chief Coop was high in his praise of the use of this apparatus at the fire. He said, "Due to fine work of the Seagrave aerial ladder, the loss was held down to only $2,000.' The two men working on the ladder with a hose line are able to direct the stream where it is most needed.

mer-operated bulbs, wall mounted. 5¼-lb. cotton waste spread on 30 by 30-in. pan and sprinkled with ½-gal. gasoline. Extinguishers operated at 40 sec. Test discontinued at 10 min. Fire not out.

"13. 1,000-cu. ft. space, 1-qt. hammer-operated bulb, ceiling mounted. 2½-lb. cotton waste spread on 20 by 20-in. pan and sprinkled with ¾-qt. gasoline. Extinguisher operated at 12 sec. Test discontinued at 5 min., 30 sec. Fire not out.

"14. 600-cu. ft. space, 1-pt. hammer-operated bulb, ceiling mounted. 1-lb. cotton waste spread over an area of 1 by 1 ft. and sprinkled with ½-pt. gasoline. Extinguisher operated at 43 sec. At 6 min., door opened and fire was found still burning. Test discontinued at 15 min. Fire not out.

"15. 400-cu. ft. space, 1-pt. hammer-operated bulb, ceiling mounted. 1-lb. cotton waste spread over an area of 1 by 1 ft. and sprinkled with ½-pt. gasoline. Extinguisher operated at 41 sec. Test discontinued at 10 min. Fire not out.

"16. 600-cu. ft. space, 1-pt. hammer-operated bulb, ceiling mounted. 2-lb. cotton waste spread over an area of 1 by 2 ft and sprinkled with 1-pt. gasoline. Extinguisher operated at 18 sec. Fire out at 14 min.

"17. 600-cu. ft. space. **No extinguisher.** 2-lb. cotton waste spread over an area of 1 by 2 ft. and sprinkled with 1-pt. gasoline. Fire out at 30 min.

Fires in Open Containers of Gasoline

"18. 1,000-cu. ft. space, two 1-pt. hammer-operated bulbs, wall mounted. 1-qt. gasoline floated on water surface in 12-qt. pail approximately 11-in. diameter. Extinguishers operated at 4 min., 18 sec., and 4 min., 34 sec. Test discontinued at 9 min. Fire not out.

"19. 1,000-cu. ft. space, two 1-pt. hammer-operated bulbs, wall mounted. 1-qt. gasoline floated on water surface in 12-qt. pail, approximately 11-in. diameter. Placed immediately below and against wall on which one of the extinguishers was installed. Extinguishers operated at 58 sec., and 7 min., 37 sec. Test discontinued at 10 min. Fire not out.

"20. 1,000-cu. ft. space, two 1-pt. hammer-operated bulbs, wall mounted. 3 qt. gasoline in 16 by 22-in. pan. Both extinguishers operated at 1 min., 23 sec. One bulb not smashed but later burst from pressure at 5 min. Fire out at 8 min., 1-qt. fuel unburned.

"21. 1,000-cu. ft. space, ten 1-pt. hammer-operated bulbs, wall mounted. One 22 by 26-in. window, 48 in. above the floor was open during the test. 1½-gal. gasoline in 30 by 30-in. pan. Extinguishers operated between 32 and 35 sec. Test discontinued at 6 min. Fire not out.

"22. 1,000-cu. ft. space, 1-qt. hammer-operated bulb, ceiling mounted. 2-qt. gasoline in 15 by 15-in. pan. Extinguisher operated at 30 sec. Test discontinued at 5 min. Fire not out.

"23. 1,000-cu. ft. space, 1-pt. drop-type bulb, ceiling mounted. 1-gal. gasoline in 20 by 30-in. pan. Extinguisher burst in holder at 2 min., 27 sec. Fire out at 2 min., 30 sec. 3-pt. unburned fuel remained.

"24. 1,000-cu. ft. space. **No extinguisher.** 1-gal. gasoline in 20 by 30-in. pan. Fire out at 5 min., 35 sec. 1-pt. unburned fuel remained.

"25. 600-cu. ft. space, 1-pt. hammer-operated bulb, ceiling mounted. 1-qt. gasoline in 1 by 1-ft. pan. Extinguisher operated at 36 sec. Fire out at 5 min. 2/3-pt. unburned fuel remained.

"26. 600-cu. ft. space. **No extinguisher.** 1½-qt. gasoline in 1 by 1-ft. pan. Fire out at 9 min., 30 sec. 1-pt. unburned fuel remained.

"27. 600-cu. ft. space, twelve 1-pt. hammer-operated bulbs, ten wall and two ceiling mounted. One 20 by 24-in. window hinged at the top swung open to allow 3¼-in. opening at the bottom. Bottom sill 48 in. from floor level. 2-qt. gasoline floated on water at level 2 in. from top in 11-in. diameter pail. Ceiling-mounted extinguishers operated at 1 min., 5 sec. Wall-mounted extinguishers operated at 1 min., 32 sec., to 1 min., 50 sec. Test discontinued when fire had consumed all of the fuel at 31 min.

"The above-described test performances are representative of the results of the 105 tests listed in the tables.

Summary

"Study of the results of tests, with woodwool (a Class A fire) as the fuel, shows no practical extinguishing effect under favorable circumstances of placement and lack of ventilation. The test structures employed were tightly constructed, the door and windows closed.

"The results of the tests conducted with gasoline-saturated cotton waste (a Class B fire) failed to be convincing as to any extinguishing capacity of the device. Study of tests 10 and 11 and also 16 and 17 indicate that whatever extinguishing effect is afforded by the devices is greatly assisted by the smothering action of the products of combustion.

"The tests with fires in open containers of gasoline (also a Class B fire) further demonstrate the influence of the products of combustion. Tests Nos. 20, 23, 24, 25, and 26 (of which 24 and 26 were conducted without extinguishers) show that the operation of one or two devices in a small room has only moderate assisting effect. Tests Nos. 21 and 27 demonstrate that with reasonable ventilation the rooms are not protected by automatic equipment of this type.

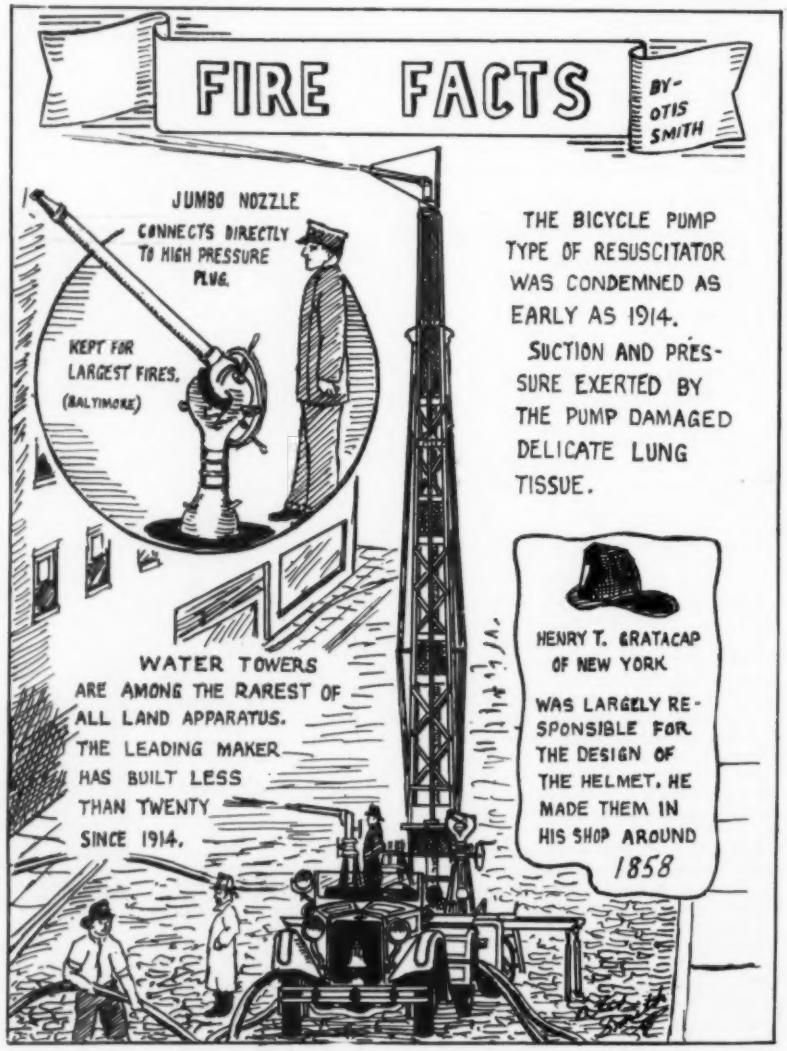
Conclusion

"Dumping 1 or 2 pt. of carbon tetrachloride upon the floors of closed rooms may not be relied upon to control or extinguish fires that are sufficiently intense to cause automatic operation of these bulb-type extinguishers. Ventilation of the rooms reduces extinguishment possibilities."

School for Northwest Iowa Firemen

Under the auspices of the Iowa State Firemen's Association, a school for northwest Iowa towns will be held at Estherville, some time in August. About two hundred firemen are expected to attend.

Four schools will be held in the state during the summer.


FIRE FACTS
BY- OTIS SMITH
JUMBO NOZZLE CONNECTS DIRECTLY TO HIGH PRESSURE PLUG.
KEPT FOR LARGEST FIRES. (BALTIMORE)
THE BICYCLE PUMP TYPE OF RESUSCITATOR WAS CONDEMNED AS EARLY AS 1914. SUCTION AND PRESSURE EXERTED BY THE PUMP DAMAGED DELICATE LUNG TISSUE.
HENRY T. GRATACAP OF NEW YORK WAS LARGELY RESPONSIBLE FOR THE DESIGN OF THE HELMET. HE MADE THEM IN HIS SHOP AROUND 1858
WATER TOWERS ARE AMONG THE RAREST OF ALL LAND APPARATUS. THE LEADING MAKER HAS BUILT LESS THAN TWENTY SINCE 1914.

PROMOTIONAL STUDY COURSE

Herein is presented a series of definitions, questions and answers designed to aid fire department officers in preparing themselves for promotional examinations. In this department, which appears monthly, will be included questions typical of examinations held throughout the country.

Definitions

Fuel Oil: Crude oil with some of the lighter hydrocarbons (gasoline, benzine, etc.) removed.
Fulcrum: The support on or against which a lever rests.
Mansard: The top portion of the outer walls which slope to the roof.
Mineral Oils: Petroleum, or its derivatives; also oils from coal tar.
Oakum: Fibre tarred with pine tar and mineral oil.

Questions

(To be answered in next issue)

1. How would you undertake to rescue workmen from the fourth story of a building, where access by elevator, stairways, and fire escapes had been entirely cut off?
2. What are the dangers in fighting fires in buildings in which carboys of nitric and sulphuric acid have become broken? How should such fires be fought?
3. How would you proceed to stretch a line of hose to the roof of a four story building, provided there is no fire escape and it is impossible to use the stairway or elevator shaft? Give details in full.
4. You respond on a still alarm to a two story farm dwelling shortly after midnight and upon your arrival find there is no fire, but the building is heavily charged with illuminating gas. State in detail what you would do under the circumstances.

False and True Questions

(Is each question false or true? Answers in next issue)

5. T F—The usual guarantee on new hose is for three years.
6. T F—The number of teeth in the character wheel of fire alarm boxes corresponds with the number of the box.
7. T F—Fires are always more readily checked after they have made headway than in their incipiency.
8. T F—At fires involving motion picture film, no great care need be taken, as film burns rapidly and its location is easily detected.
9. T F—There are three hazards of metallic powders; explosion of gases, explosion of dust and spontaneous ignition of the powder in bulk.
10. T F—Pressure is usually stated in gallons per square inch.
11. T F—A perfect vacuum may be obtained in a fire pump when drafting if it is in good condition.
12. T F—Fresh water weighs more than salt water.
13. T F—Various dusts and combustible gases have fixed ignition temperatures.
14. T F—Ship fires are sometimes accompanied by the buckling of plates and the opening of seams from end to end of the vessel.
15. T F—All explosives will immediately explode on ignition.
16. T F—In overhauling baled material, the bales should be removed from the floor near the walls first.
17. T F—Under no condition will the best pumps raise water in a suction hose more than 24 ft.
18. T F—The efficiency of the department can never be judged by the team-work of the officers and members.
19. T F—Textile goods, or materials done up in rolls, which have been affected by fire, should be unrolled and thoroughly examined for fire.
20. T F—Fireboats are so arranged as to permit of their pumping water while they are being moved along the fire-front.
21. T F—Oil forms a coating on docks and under piers and is considered a means of retarding the spread of fire.
22. T F—Firemen should be guided by the advice of those in direct charge of a refrigerating plant, when operating on a fire in such a plant.

Completion Statements

23. An interior standpipe system in a building usually extends from the .....to the.....
24. Fire foam produces the best results on a fire in a tank of oil if thrown into the tank with..... velocity.
25. A fireman, when inspecting a building, should be dressed in.....
26. The velocity of water from a nozzle depends only upon.....
27. The temperature to which a body must be raised before it will burn is called the.....

Answers to Questions in Previous Issue

1. (a) The chief hazard in connection with fighting fires in grain elevators is the possibility of dust explosions. The processes of elevating grain in an elevator create a great deal of inflammable dust, which settles on ledges and other points where it can repose. When fire is burning, and this dust is disturbed by fire streams or otherwise, there is a liklihood of it accumulating in proper proportion in the air to cause an explosion. Such an explosion may completely wreck the elevator, and would prove extremely hazardous to the men operating around it.

Another hazard is the great quantity of grain stored in the elevator. In the event that the elevator is afire, and large quantities of water are thrown into the grain bins, the additional weight of the water may be sufficient to cause the bins to burst, again endangering the men.

In most elevators there are garner bins at the top of the structure in which the grain is stored prior to weighing and dumping into the main elevator bin. The presence of large quantities of grain at such a high point adds to the hazards, particularly where the structure is weakened by fire. The absence of ports through which streams may be directed at the burning grain in the various bins makes the elevator fire extremely hard to handle.

(b) In a way, modern coal pockets resemble grain elevators. They have a conveyor for carrying the coal to the top of the bin, where it is dumped and stored for short periods of time. The chief hazards in connection with a fire in coal pockets are: possibility of the pockets rupturing due to the weakening effect of the coal burning within; heavy fumes thrown off by burning coal; danger of collapse of structure due to increased weight by water being thrown on fire in bin; possibility of coal dust explosion when dust is disturbed by streams, or otherwise.

Coal pocket fires, like elevator fires, are hard to get at due to the absence of openings through which streams may be directed at the fire.

2. Problem does not state on what alarm I respond, nor what other companies I may expect in addition to my own. Nor does the problem state the exposures, the size and type of adjacent and adjoining buildings, the width of streets and alleys bordering on building, location of hydrants, nor wind and weather.

Assumptions will therefore have to be made in order to answer this question.

At this type of fire intense heat and great volumes of smoke are to be expected. The fire spreads fast, and the early collapse of the roof may be looked for, unless effective methods are followed immediately to prevent this. Large streams are needed to cool off the fire and to check it. Fast work is vital.

Assuming that I respond on a box alarm, and that I will have, in addition to my own engine company, two other engine companies and two truck companies, the method of procedure would be as follows.

Immediately transmit a second alarm, or third alarm, if wind conditions and exposures warrant it.

Stretch in two lines from the first engine company to a siamese feeding a single line, or to a deluge set with 1½-inch nozzle, this pipe to be operated at the main entrance of the garage, and to be employed for wetting down the interior of the building, protecting the exposed roof trusses, cooling the atmosphere, and killing the fire.

Second engine company to stretch a single line to the rear to cover exposures, and to operate on the fire, if this can be done effectively.

Third engine company stretch in a single line to the front of the building and follow in for closer work, after the first engine company has killed the main body of the fire, and reduced the temperature sufficient to permit the men to enter.

First truck company to go to the roof and open up at the rear at once, to draw the fire up through the rear of the building and to release the heat and smoke which has accumulated at this point.

Second truck company to aid engine

companies in laying in lines. In the event that fire has reached such proportions as to seriously endanger buildings on either side of the garage, then the third engine company would stretch to a deck pipe on a wagon placed directly in front of the garage to wet down the building on both sides, and prevent fire entering them.

The deck pipe would be of little use in operating on the fire itself, due to the height of the deck gun above the street and the fact that the building is 100 feet deep and the fire building is but one story in height. It is very unlikely that a stream so provided would reach the entire depth of the garage. Hence a heavy street stream is employed instead.

The first heavy stream from Engine No. 1 should not only kill the body of the fire, but should cool off gas tanks on the automobiles and prevent their explosion, or the generation of large quantities of gasoline vapors by them.

It is believed the foregoing assignment of apparatus will hold the fire until the arrival of additional companies, and a superior officer, to whom the work already performed would be outlined, and who would assume command.

3. False; 4. True; 5. False; 6. True; 7. True; 8 False; 9. True; 10. True; 11. False; 12. True; 13. False; 14. True; 15. False; 16. False; 17. True; 18. True; 19. False; 20 True.

21. .....ventilation
22. .....½.....
23. .....inside.....
24. .....1500.....
25. .....conduction.....

Plans Made for New England Chiefs' Convention

Final plans for the fifteenth annual convention of the New England Association of Fire Chiefs, to be held at The Balsams, Dixville Notch, N. H., on June 22, 23, and 24, were completed at a meeting of the officers and Board of Directors which was held in Lewiston, Me., on April 13.

An interesting program has been arranged and the Exhibit Committee reported that several new covered types of pumping engines will be on display.

The meeting was attended by Chief Carl D. Stockwell, Burlington, Vt., President of the association; Chief John W. O'Hearn, Watertown, Mass., Secretary-Treasurer; Chief Joseph W. Randlette, Richmond, Me., First Vice-President; Chief Thomas F. Burns, Bridgeport, Conn., Second Vice-President; Chief Michael W. Lawton, Middletown, Conn., Director and State Vice-President; Chief Charles H. French, Manchester, N. H., Director and State Vice-President; Chief Alfred M. Koltonski, Rutland, Vt., Director and State Vice-President; Chief Oliver T. Sanborn, Portland, Me., Director and State Vice-President; Chief Albert C. Melendy, Nashua, N. H., and Chief William T. Happny, Concord, N. H., of the Exhibit Committee; and Harry Belknap, Boston, press representative.

Secretary O'Hearn reported the following deaths of members of the association since the last meeting of the Board of Directors: Chief John A. Palmer, Torrington, Conn.; Chief Charles E. Hill, Elizabeth City, Me.; Ex-Chief Patrick J. McGrath, Meriden, Conn.; Dr. Joseph W. Scannell, Ex-Fire Commissioner, Lewiston, Me.; Chief John N. Neary, Natick, Mass. and Ex-Chief James M. Casey, Cambridge, Mass., Honorary Life Member.

Chief George L. Johnson, of Waltham, Mass., was selected to make the response to the addresses of welcome at the opening session of the convention on Tuesday. The memorial service will be conducted by the Rev. James F. Happny, of Holy Trinity Church, Somersworth, N. H., who is a brother of Chief Happny, of Concord, N. H.

The afternoon session on Tuesday will be devoted to forest fire problems and a round table discussion for forest wardens.

Among the subjects to be taken up on Wednesday, the second day of the convention, will be "Voice Transmission of Alarms and Fire Department Amplification Systems"; "Hazards of Gas and Explosives, with Report of the New London, Texas, School Disaster"; "Gases and Resuscitation"; "The Trend to Covered Apparatus"; "New Developments in Firemen's Training Courses"; and "Standardization of Threads on Hard Suctions."

Chief Melendy, of Nashua, N. H., Chairman of the Exhibit Committee, stated that indications point to a record display of apparatus and fire department supplies.

It is planned to have demonstrations of wagon guns, portable monitor nozzles, vapor and fog nozzles, and forest fire pumps. A program of sports and games is being arranged and a committee will draw up a schedule of amusement and entertainment for the ladies. The annual banquet will be held on Wednesday evening.

Election of officers, reports of committees, and unfinished business will take place on Thursday.

Golf, fishing, boating, tennis, bowling, games, movies, and dancing will be among the entertainment features available at The Balsams. Chief Oliver T. Sanborn, of Portland, Me., is Chairman of the Registration and Reservations Committee.

HARRY BELKNAP

Many to Exhibit at New England Convention

According to Chief Albert C. Melendy, Nashua, N. H., he may have to provide additional exhibit space for the coming convention of the New England Association of Fire Chiefs, to be held at Dixville Notch, June 22 to 24. The following have contracted for exhibit space:

Ahrens-Fox Fire Engine Company
American-LaFrance & Foamite Industries
Maxim Motor Company
Seagrave Corporation
Farrar Body Company
Gorham Fire Equipment Company
Justin A. McCarthy Company
Gamewell Company
Rockwood Sprinkler Company
Samuel Eastman Company
American Fire Equipment Company
Atlas Fire Equipment Company
Bi-Lateral Fire Hose Company
Midwestern Manufacturing Company
Boston Coupling Company
Lovell-Dressel Company, Inc.
C. G. Braxmar Company, Inc.
Quaker City Rubber Company
Charles Niedner Sons Company, Inc.
FIRE ENGINEERING
Mine Safety Appliances Company
Fred M. Batchelder Company
Fabric Fire Hose Company
D. B. Smith Company
Homelite Corporation
Voltex Corporation

Fire Endangers Asylum

Internal combustion of a pile of rags near overheated furnace pipes in the state hospital for the insane at Clarinda, Ia., is believed responsible for a fire that threatened that institution.

Patients from three wards, including the violent patients were moved. All patients were moved in twenty minutes.

The Clarinda Fire Department reached the fire shortly after it was discovered, and were able to confine the blaze to the basement.

N. F. P. A. To Meet

The program has been completed for the forty-first annual meeting of the National Fire Protection Association to be held at Chicago, May 10 to 14.

On the first day there will be a meeting of the Fire Marshals' Section, in charge of Sherman V. Coultas. There will also be meetings of the Marine Section, and the Railway Fire Protection Association Section.

During the convention, a visit will be made to the Underwriters' Laboratories, Inc., where a number of tests will be demonstrated.

Signal Services Group to Meet in Elizabeth, N. J.

The third annual convention of the Associated Signal Services, a coordination of municipal signal associations, is to be held at the Elizabeth-Carteret Hotel, Elizabeth, N. J., on June 28 to 30. The program in preparation includes three day business session and will be given over largely to the discussion of "Municipal Signaling Service for Castastrophe Conditions." There will be papers on the value and experience of fire alarm telegraph, loud speaking systems, and other related subjects. There will also be an exhibit by manufacturers and distributors of the products used in this service. An interesting entertainment program is also in preparation.

Chief Muccio Killed

Michael J. Muccio, Chief of the Glastonbury, Conn., Fire Department for several years, was killed instantly on April 30 at Colchester, when his car left the road, went over an embankment and crashed into a tree. Chief Muccio's wife and daughter were critically injured in the accident.

According to state police records, the Muccio car went to the right of the road and traveled about 160 feet. It then struck a telephone pole and left the road completely on the right side. The machine catapulted down a four-foot bank and struck a tree head on. The car was demolished and the engine lay some distance from the chassis.

Chief Muccio had been Chief of the Glastonbury Fire Department since its formation in 1930 and was a member of the Board of Fire Commissioners of the Department. He was highly instrumental in the organization work of forming the present Fire Department, following the disbanding of the Center Fire Company in that town. He was also Chief of the Glastonbury Police Department.

THOMAS F. MAGNER.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

MAINTAINING INTEREST AMONG VOLUNTEERS

REGARDLESS of how you may have viewed the matter, basically a volunteer Fire Department is a form of a social club.

Primarily they are concerned with fighting fires. But fires do not occur every day, and in order to keep up the interest of the members, the social benefits of the group must be developed.

Many simple devices have been used. It is common to hold chicken suppers, the simple pork and bean dinners, frankfurter roasts, the more formal dinner prepared by members of the department, dances and card parties to which the ladies are invited, etc. One department has found that it can hold interest by the simple plan of having the boys go out together to a nearby lunch room for coffee and cake, after the meeting is over.

Socially, all this is simple. Man was never intended to live by himself. Anything that will encourage the amiable congregation of groups, is well received. Therefore, the best advice to the volunteer firemen is not to neglect the social side.

In the box on this page is the problem in full that is discussed in this issue. In the box on the following page is the question that will be presented in the next issue.

Discussion of the Question

E. H. McCall, Driver, Needles, Cal.: For keeping volunteer firemen interested in the activities of the department, we suggest the following method, which we use. Each man is paid $5 per month for four practices, that is one day each week is set aside for drill. In case we have an alarm, which turns out to be a false alarm or a small fire that needs only the use of the booster tank, it is considered a practice and then the department does not go out on the next practice night.

Each man gets paid $3.50 for fires that require hose lines, and at times it nets them quite a tidy sum at the end of the month.

If a fireman does not appear at practice he is "docked" $1, which is paid to the first extra man. As a rule, however, every man turns out for practice on time. You know the old saying, "Money talks."

Another good way to keep the men interested is to form a firemen's association. Here there are two Fire Departments. The Santa Fe, manned by Santa Fe employees, and the Needles Fire Department, manned by volunteers. We now have an Association known as the Needles Firemen's Association, made up of the Santa Fe and Needles Fire Departments and the business men of the town.

We have business meetings once a month, smokers, ladies' nights and annual dances. This all helps to stimulate and hold the interest of the men.

All men have badges and caps. We endeavor to dress as uniformly as possible.

By-laws, too, are essential in volunteer departments, and other Fire Departments in the states are always willing to aid in forming such laws by supplying copies of their own laws.

Russell Dyche, Chief, London, Ky.: The best way to keep the volunteer firemen interested is for them to be so trained and so acquainted with their equipment, that when the call comes they will do a good job at the fire. Fortunately, actual fire experience is so limited in many, if not most volunteer departments, that this incentive must be supplemented.

Here is what we do in an attempt to increase this incentive: Twice each month we have a drill of 1½ hours and after the drill we go in a body to a soda fountain or restaurant for light refreshments. This serves to give the social touch and afterwards those who wish return to the station to indulge in cards or pool. Our firemen are paid for drills only (they never miss a fire if available) and all of their small renumeration goes into the Firemen's Club fund. Associate members pay dues to maintain the club, buy minor needed equipment, etc. The Fire Department, or Club, sponsors a Firemen's Band, and among the other civic activities during 1937 were Saturday night concerts in Summer, and Sunday afternoon community sings, a two-day county "Homecoming" celebration, a community Christmas tree, a Santa Claus parade and a three-day Harvest Festival and street fair, with all home talent. The parade and festival proved profitable as well as interesting work for the firemen and their familes. We arrange for at least one dinner party to which we take our wives and friends.

I doubt the advantage of rivalry between companies in most Fire Departments. Strict discipline is observed at drills and at fires.

H. G. Lindgren, Chief, McPherson, Kan.: A firemen's principal job is to save life and property from fire; he should, therefore, be well informed as to how to rescue people from burning buildings, how to care for the injured, and know about fire hazards, fire causes and fire extinguishment. The Chief, or the officers of the department, can make a very interesting course of instruction from the promotional study course in FIRE ENGINEERING, and so arrange the personnel, that rivalry between companies would be welcome and not one-sided. This should prove very interesting to the department members, and also increase the efficiency. It is well, too, to have people outside of the department give talks or demonstrations that will be of value to the department.

With any organization there must be some form of discipline, and it has its place in the Fire Department. It should be fair and firm, however. The personnel should be loyal, courteous, ambitious and have confidence in self and others to need very little discipline.

W. L. McCrory, Chief, Williston, N. D.: We have never experienced any trouble in keeping volunteer firemen interested in the activities of the department.

I have belonged to the department for the past 24 years and have been Chief for the past 18 years. Our policy is to keep good men in the department. We limit our organization to about fifteen men. The department does not mix in politics.

We have a meeting the second Wednesday in every month starting

HERE IS THE PROBLEM

What means would you suggest for keeping volunteer firemen interested in the activities of the department?

Do you believe that developing friendly rivalry between companies might help?

Would firm discipline be beneficial?

with a six-thirty o'clock dinner at the fire hall prepared by a committee from the department. After the dinner we have our meeting. When the meeting is over, the members play pool or cards and drink a little "three point two."

We do not have separate companies in the department. I think the Chief should be firm at a fire but give orders in a courteous manner.

Wm. T. Craswell, Chief, Valley City, N. D.: Interest in our department is maintained through drills, instructions in handling equipment, fire inspections and fire prevention work, a public exhibition once a year, a firemen's soft ball team in our local league, excellent beds and sleeping quarters, and a clean, cozy rest room.

We have but one company, now; years ago when the department was divided into companies, there was considerable friendly rivalry.

There must be some discipline; the rigid discipline of a paid department should not be attempted in a volunteer organization. The officers should keep up to date, and abreast of the times, in order to hold the respect of the men. If they do that, they should secure splendid cooperation, at least we have found it so, here.

A. Wayne Row, Chief, Yeadon, Pa.: To maintain interest in the volunteer department give as many of the men a definite responsibility, rather than have a few men hold several interlocking offices or positions in the company. Hold meetings and make them as interesting as possible and try to include a subject of immediate fire-fighting concern. Provide social facilities for the members to gather at any time, whenever possible. Organize training classes and hold frequent drills.

I advocate friendly rivalry between different squads in the company and between neighboring companies. But if this rivalry takes the form of formal contests, with awards to the winner, sooner or later some one will feel cheated and the results will be a tearing down in a few moments what it may have taken years to build up. Friendly drills at a predetermined time and place (preferably a large mill, etc., where water could be drafted) between companies from neighboring communities would prove beneficial from several standpoints.

My personal theory is in favor of discipline, not only among active fire-fighting members of the company at fires, during drills, classes, etc., but to be applied to prospective active members. Candidates should be able to demonstrate that they already have a fair working knowledge of the duties to be performed, or serve a probationary period, during which time they would attend training classes. After all, the volunteer fire company in a small town has practically the same risks, same values and same conditions as the paid Fire Department has in any one average residential or medium manufacturing district covered by an engine company in a larger city, and training and discipline must of necessity be comparable.

E. H. Wheeler, Chief, Franklin, N. H.: Officers that are efficient and interested in developing a good department are in a position to keep the men interested in the department. If the officers are of the right type there should be plenty of ways and means for keeping the men interested. Modern equipment is very essential for developing pride and interest in a department. Another important thing is having means for recreation and study. A library of fire department books for the men who desire to advance in this line of work is very essential.

Friendly rivalry is okey, as long as it remains as such, but, unless good judgment is used, it is apt to develop hard feelings between companies. In our department the companies are taught to work as a unit, and each one has its duties clearly defined. This method does not leave much of an opportunity for competition between companies.

I believe the only way to have an efficient department is by having strict discipline. We insist upon this and it works out fine. Without discipline a department cannot function properly, and it should be one of the important branches of the volunteers training.

A. H. Wygal, Drillmaster, Pulaski, Va.: I think that getting the volunteers together as often as possible, and using some interesting subject on fire fighting for discussion at this meeting, keeps them interested. A banquet from time to time also is helpful in maintaining interest. I find that the men will all enter the discussions especially if discussing a probable fire in one of the local buildings.

I do not think friendly rivalry in this section would be a good plan.

Firm discipline is all right, but you must remember what you are paying them.

O. Butts, Chief, Albany, Ore.: Keeping volunteers interested in their fire service is of major importance to the department today. My suggestion to this question would be for the cities to allow a small amount of their budget to this service. I believe firm discipline to be beneficial to any department. Keep the control of the department among the men elected to this work.

I think a volunteer department can keep interest going by sponsoring some type of a community endeavor, allowing them to put on dances, or wrestling matches to sell the department to the public. Under existing conditions, it is hard to interest the individual in the volunteer department. Early education of fire prevention and drills in schools such as speeches, fire brigades, are a big asset to the volunteer departments and also a big opportunity to sell the younger generation on the present fire problems.

S. E. Brentari, Chief, Gallup, N. M.: Dances and parties for the members during the winter months, banquets or suppers, with several of the firemen doing the cooking, help to keep the men interested as members of a volunteer fire department. A card party of some kind with the wives or friends invited, or a party for business men, would also be helpful. A family spirit is to be encouraged. Have the editors of the newspapers give the necessary build up, using as many local names as possible in the paper. The boys as well as the local people like to see their names in print. Buy a radio, build a club room, etc. Mix in some fun with the work. I do not believe in building friendly competition. It causes cliques.

The word discipline means training and education. Some Chiefs have the idea it means being the boss, giving orders and general abuse. A cool headed chief and one who understands fire fighting can command the respect of his men without being abusive. Meetings and drills must be conducted in an orderly manner, and the men will get the idea if they are given to understand that they must act like men. Discipline is a continuous job and must be done in a friendly spirit.

H. E. Whitney, Jr., Chief, Brattleboro, Vt.: Get togethers, dinners, entertainments, etc., keep volunteer firemen interested in the activities of the department. Friendly rivalry between companies might help. I believe in firm discipline if it is not carried too far.

William R. Anderson, Chief, Fort Weyers, Fla.: A well organized and efficient Fire Department is one of the best assets of a city or town. The department's duties are solely to protect life and property in the community, and the maintenance of an efficient Fire Department is not only a credit to the members of the department, but something relative to the town or city government that its citizens are bound to be proud of and derive a dividend from. With few exceptions, the Fire Department seems to be one part of the city government functions that do not receive the proper support. Too often the Fire Department is neglected. Means are not provided for adequate apparatus and man power to maintain an efficient fire combatting force. We have had examples of this short sighted economy in this state.

Fire Department, like armies, seem to be expensive luxuries, but when needed they are needed so darn bad that a well organized, well equipped Fire Department is cheap at any cost.

Given the proper equipment, it is our duty as firemen to know how to properly handle it. It is up to those who are in charge to so administer the affairs of the department that it will be a credit to our city or town.

Fire Department administration, or the laws pertaining to the operation of a Fire Department, is, broadly and strictly speaking, entirely contained in four words: Discipline, loyalty, bravery, and pride. They include all of the laws there are for the operation of a Fire Department, be it paid or volunteer. It is true that most departments have their book of rules and regulations, but you will find that they are for the purpose of making effective these four general laws. Let us take these up one at a time, Discipline—Think of it for just a minute.

HERE IS THE PROBLEM FOR THE NEXT ISSUE

Which should be responsible for rescue work and rescue truck operation (1) Police Department? (2) Fire Department? Why?

Where would our Fire Departments be without discipline? A great many feel that discipline in the fire service applies only to paid departments, but in my humble opinion this is not so, as any Fire Department must be strictly disciplined to obtain the efficiency that it is expected to show in any town, hamlet or city in this or any other state. This can be done, I believe, without any hardship, or without using any harsh means.

Discipline in any organization is the kingpin of its success and efficiency. It must be maintained in a way that will accomplish its purpose without partiality, prejudice, or severity and beyond indulgence.

Men in the fire service should not only be loyal to their city, their chief and their fellow firemen, but the city officials and the Chief should be loyal to the men. It is impossible to have loyalty without respect, mutual respect between men and officers.

Bravery is defined as courage or valor. We in the fire service refer to it as guts. We need say little about this here, because if a man in this line of work does not have his share of it, he does not remain long with us. But we should be careful not to allow fellow firemen to take unnecessary chances, unless it is to save a life. I do not consider a burning building as valuable as the life of one of my men, nor does any other chief.

If a man in a Fire Department is not proud of that department, and the men with whom he works and lives, he should find some other work. The fire service has no room for men who are not proud to be a fireman.

Ed Nelson, Chief, Guthrie, Okla.: Our department consists of twelve regular firemen, seven men who sleep at the station, and six call men. The sleepers and call men get all the privileges that the regular firemen receive, such as free passes to all shows, free rides on the bus, etc. They also get their hunting, fishing and swimming license at the city lake. We have fish fries and other get-togethers.

I do not believe in competition between fire companies for it causes the men to work over their heads and take unnecessary risks. However, we strongly believe in all the speed that accuracy will permit.

I believe in firm discipline at all times.

Thos. Pauley, Chief, New Boston, Ohio: I believe that volunteer firemen should receive a small salary and pay for each run and practice run that that they make. I further believe that developing friendly rivalry between companies help to make better firemen. Firm discipline should be exercised.

L. A. Mackey, Chief, Longview, Tex.: To keep the firemen interested in the department there should be a monthly meeting. Serve refreshments and have a round table discussion on the needs of the department.

I recommend that the city officials meet with the Fire Department and that refreshments be furnished by the city. This will insure full attendance.

I believe in firm discipline in paid departments, but not too much in volunteer.

C. E. Hull, Chief, Audubon, N. J.: My belief is that if volunteers were not firemen from the heart, they would not belong to the Fire Department. Therefore, they are deeply interested in fire work and take very kindly to training in fire department work. I believe the proper school of training for these men is of the greatest interest to them and will keep them interested.

I believe that honest competitive efforts and drills between companies is of great value. Discipline is just as necessary in volunteer companies as it is in paid departments but should be applied in the proper manner.

J. Guy Rusmiselle, Chief, Waynesboro, Va.: Developing a good volunteer Fire Department is somewhat of a problem. We have a town of about 10,000 people and we are growing mighty fast. Ten years ago we consolidated with Basic, another small town, and both towns had fire stations. I was appointed by the town to work out a successful system. Both towns wanted their men to head the companies. I suggested we have one company, with two stations, and each of the stations could have one of their men at the head. This has worked out and I have found, in order to keep the men interested, it is a good idea to give each one some little job, and make him responsible for it. We give each man a badge with his authority on it. It means a lot to some people.

We have a school each year. There are some fellows who when young spent a lot of time playing truant. It is mighty hard for them to see through the modern ways of fighting fires. Yet they are real firemen and are always willing to get out in the evenings (especially in the summer) and practice with the equipment. We also have several suppers each year. We find it is a good thing to hand out some little gift at these suppers to a fireman who has shown extraordinary work while in line of duty. The gift costs but little, but it means a lot to the man.

I believe friendly rivalry between companies is a fine thing, but the men who are in charge should see that it is friendly.

In a volunteer company you can't use the words "firm discipline" as it can be used in a paid company. Of course you must have rules and it is a good idea to make these rules with the help of the men, for they will then feel more like living up to them. After all they are human, and when a man is giving his service, you have to lead him and not drive him.

H. G. Painter, Chief, Kento, Ohio: To keep volunteer firemen interested in the activities of a department, depends largely upon the officers of a department. The Chief and his officers must keep abreast of all new methods in fire prevention and fire fighting. They must have the welfare of their community at heart. Every Chief must know the game himself, must know his men and be the leader. He must pick intelligent, hard working, clear thinking men, who will follow him and his officers through.

In bad weather, too bad for outdoor practice, have inside work, such as study of ropes, knots, small ladder work, resuscitation, first aid, and black board chalk talks. It is well to put a fireman in charge for an evening to run a drill. In this way the officers may find out what each man knows about the job as a whole and bring out a wider range of ideas.

Above all, the Chief and officers must be men among men, and work with and for the men under them. They should use discipline when necessary, but be fair, without partiality.

Dances, parties for the members and families, and an occasional chicken, fish or hot dish supper, is a great help to sociability. A family spirit should be encouraged among the group, thus creating a better spirit of cooperation. There must be some fun mixed in to round out the picture.

H. M. Serle, Chief, Fairmont, Minn.: We had the same trouble years ago that I suppose all volunteer Fire Departments go through in holding together a company of experienced men. Fairmont is a small city of a little over 6,000. I was one of the originators in 1880 and have been with the fire company ever since. Some twenty years ago I went to our City Council and asked for an appropriation of about $500 a year to start a pension fund for members of the department who would put in continuous service of twenty years and retire at the age of 50. I got it and then with the two per cent that we got from the insurance companies in the state, we started the pension fund. We started paying old members off at fifty years with a pension of $50 a year, with the promise to enlarge it as our fund increased. Today we are paying the men $110 a year, and we have eighteen men on pension. I have not had a man quit for ten years.

Rivalry between companies will be successful, if it does not engender bitterness. Discipline you must have to make a success, but it must not be too rigid. You cannot expect the same amount of discipline in a volunteer department as you do in the paid departments. I have put a life time in Fire Department service. Left the Mercantile Marine Service in 1878; organized the Fairmont Volunteers in 1880; President of the Minnesota State Association in 1814; Represented the State at Providence, R. I., International Chiefs Convention; will be 81 years old on May 25, and I am still in active service.

Wm. Feldhusen, Chief, No. Arlington, N. J.: I have found in my twenty-eight years in the volunteer Fire Department, the more alarms we have the happier the men seem to be. Also the social activity such as dances, carnivals, field days and fire drills help to keep the friendship of all men in the department.

Sometimes competitive drills work to a very good advantage but I do not approve of them.

We had a fire drill some years ago and a water battle was suggested. Accidentally a small stone came through the water and hit one of our members in the eye. Although this was purely accidental the members of these two companies were not on good terms for a long while.

Firm discipline in a volunteer Fire Department cannot be maintained, as the men do not get paid for what they do. My experience is you can get more cooperation by working with the men than trying to drive them. A little "salve" goes much further than the "whip."

Roy Shafer, Chief, Pratt, Kan.: To develop interest and keep it in the volunteer department, we believe in holding one practice and business meeting and one social dinner meeting each month. We believe in developing friendly rivalry between companies. We also believe in firm discipline.

Ward Hall, Chief, Alliance, Neb.: We have had very good success in keeping the men interested by allowing a certain number of points for attending fires or drills and at the end of the year the four high men get all expenses paid to attend a fire school or to a fire convention. We have doubled our average attendance for the year by 50 per cent.

I believe in competitive drills for the men take more interest in their work and try harder.

The Chief or instructor must be firm at all times. All volunteer departments have young members coming in and they must be taught from the start to obey their Chief.

J. E. Stevens, Chief, Lake Wales, Fla.: We have found that our men do not like to work around or with poorly kept equipment. We therefore make an endeavor to have as good equipment as we can, keep the department in first class shape, and in general maintain a fully equipped department.

On drill nights we have a big feed of some kind for we find this is the best way of getting the men out once a month. We also have a dance once a month. In other words we have some activity or amusement for them. We at present have a very low fire loss. I have managed to get the men interested in keeping it down. Therefore, when an alarm is sounded, they go to the fire and do every thing possible to keep down fire and water losses.

In a volunteer department, firm discipline cannot be carried out as the men do not get enough pay. Just let them know that you are Chief and that they are to take orders.

A. L. Cogswell, Chief, Auburn, Ind.: By having a fire station with good facilities for a monthly banquet, card parties, etc., you have the best method of keeping the volunteer firemen interested in the department. There should be a practice night once a week. The men should enter into contests whenever the opportunity permits. And further, the by-laws of the company should be lived up to.

By all means, have friendly rivalry between all companies. Firm discipline is the life of the company.

Milt K. Herrick, Chief, Alamosa, Col.: Social activties and fire drills are the best means of keeping the men interested in the local, volunteer Fire Department.

I do not believe in competitive drills with other companies due to the danger of accidents and the unnecessary water damage caused by such contests.

We do not believe in firm discipline. We have wonderful cooperation from our City Council and our officers are always willing to take suggestions, both at fires and when we sit around at our social gatherings.

J. S. Eshelman, Chief, Arcadia, Cal.: I am of the opinion if you make your drills interesting through the medium of educational motion pictures showing your men and volunteers just how and why drills are held, then practicing them, interest will be maintained in the department. I also think the drills should be conducted in such a manner that the men will have a thorough knowledge of the equipment and its various uses.

Having at the present time only one fire house, I am unable to say whether rivalry between companies will help. Although I do know keen competition between shifts helps to speed up the time required to hook up to the pumper.

I think discipline is very essential to any Fire Department. Without discipline you cannot be efficient.

S. Compston, Chief, Catlettsburg, Ky.: There are eleven members in our Department. All men are young and active and interested in their work. I would not have a man that is not interested in fire fighting. The man who enters the department for pay would not enter ours, as the pay is so little.

The way I keep my men interested is to have drills each week, rotating from hose, ladder, salvage and rescue activities. We also have round table discussions each week at the fire house. We have monthly meetings, get togethers, etc. By all means promote friendly competition. Companies disagreeing might result in service trouble. If such trouble should arise seek the source of it and take steps to overcome it.

Discipline is something that has to exist in the department.

We take great interest in our river. All men are good swimmers. We have a 16-foot double oar lock skiff for rescuing river victims, and for use in case of flood. We take charge and control all boats in case of a drowning and floods. All men are drilled in rescue work.

S. H. Boland, Chief, Hinton, W. Va.: To promote interest in the volunteer department, the Chief should be courteous to each and every one of the firemen. Show no partiality toward any individual and allow no grievances to exist in the department. Bring all matters up at the regular meeting and dispose of them.

I believe in friendly rivalry between companies. I further believe in firm discipline and it has always proved satisfactory in our department.

W. S. Brown, Chief, Conway, Ark.: To keep the volunteer firemen interested in the activities of the department, I would suggest plenty of drills. One very essential point is to keep harmony between companies if the department is to stand. Too much discipline cannot be forced in a volunteer Fire Department.

* * *

Answer to Previous Question

The following reply was received in answer to a previous question on delayed alarms caused by telephone calls:

W. H. Hull, Capt., Merrick, N. Y.: We receive all our alarms over the telephone, and have had very few cases of inaccurate information.

Fire calls are received at the police precinct station house and are relayed to us over a private line telephone. Because of the fact that the Police Department insists upon accurate and complete information from persons telephoning an alarm, we have had little fault to find with this system.

Also, by receiving our calls through the police station, it enables the police to get to the scene as quickly as the firemen. And one great advantage to us is that we usually know what kind of fire we are responding to. In that respect it is better than street boxes.

S. J. Pope, Chief, Boston, Mass.: In our city there are a great many times that the names of streets are duplicated. For that reason when an operator at fire alarm headquarters receives an alarm over the telephone, they are instructed to find out the telephone number from which the alarm is given. They can readily tell then by the exchange from which section of the city the alarm is given and thereby dispatch the correct response. While we have not had a great deal of trouble from telephone alarms, I would suggest that the best way to eliminate any trouble is to have a liberal number of fire alarm boxes and to educate the public to pull them in case of fire.

F. Higgins, Asst. Chief, Grand Rapids, Mich.: There is great danger in telephoning alarms. Similarity in names of streets, excited persons screaming, and improper dialing causes much trouble. In Grand Rapids not as much equipment is detailed on a phone call as on box. This causes delay on getting the second alarm through. If a box is pulled, the marking is clear and decisive.

Gramley, Aurora, Ill., Resigns

Lloyd E. Gramley, Fire Marshal of Aurora, Ill., and a member of the service for nearly twenty-nine years, and Fire Marshal for six years, resigned. In 1917 he was appointed Lieutenant, and on March 1, 1923, Captain. He was appointed Chief of Department on July 27, ,1931.

Rhode Island Chiefs Meet

John J. Crowe, Assistant Forest Warden, of Massachusetts, was the principal speaker at the April meeting of the Fire Chiefs' Club of Rhode Island, which was held at Burrillville. The Northern Rhode Island Firemen's League were hosts. Mr. Crowe gave a talk on the practical side of forest fire fighting and fire prevention.

For entertainment there were sound pictures on fire-fighting subjects, scenic and comedy subjects. There were also some singing and dancing entertainers.

A resolution was passed congratulating Chief Frank Charlesworth, Providence, for the first prize awarded by the U. S. Chamber of Commerce in the fire waste contest. Providence, with its per capita fire loss of 58.2 cents, had the lowest loss for any city in its class in the United States.

The club voted to dispense with the clambake this year and instead concentrate on the Ladies' Night, to be held in October. A. ROBERT BLACK.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Parallel Lines

To the Editor:

I have been under the impression that three lines of 2½-inch hose siamesed should be changed to a single line of 2½-inch hose by dividing 200 feet by 7.75 in order to solve for engine or nozzle pressure? Is this correct?

B. H.

Answer: It is not necessary to change parallel lines of equal length to a single line of hose in order to solve for engine or nozzle pressure.

The values of K are provided for parallel lines as well as single lines. The value of K for three 2½-inch lines of hose equipped with 1½-inch nozzle is .061.

Pressure Calculations

To the Editor:

I am submitting herewith some problems in hydraulics for heavy stream appliances:

Problem No. 1:

Two 150 feet lines into deluge set. 1¼-inch nozzle; 200 pounds engine pressure.

$$N.P. = \frac{200}{1.1\ (135 \times 6)}$$

N.P. = 105 pounds.

G.P.M. equals 459.

Vertical and horizontal reach?

Problem No. 2:

3—150 lines into turret; 1½-inch nozzle; E.P. equals 200 pounds.

$$N.P. = \frac{200}{1.1\ (.061 \times 9)}$$

N.P. = 121 pounds.

G.P.M. equals 493. Vertical and horizontal reach?

Are these problems correct? If not please work them as they should be worked. In problem No. 2 where three 2½-inch lines are used, K equals .061. Do you multiply K, or .061, by the total number of 50 feet lengths in the three lines, which would be 9? How can I find K for different size nozzles for more than three lines.

Can you recommend a book on hydraulics that I can use?

A question I would like to see discussed is the value of hydraulics in the Fire Department. Some men are of the opinion that the subject is too deep for the average fireman.

S. C. S.

Answer: The first part of your solution of problem one is correct. Nozzle pressure equals 105 pounds as you have determined by your calculations.

But the discharge in gallons per minute is 885 instead of 459 as you indicate.

Discharge (approximately) equals 30 x d x d x $\sqrt{p}$, where d is the nozzle diameter in inches, and p, the pressure in pounds per square inch.

Vertical reach with 105 pounds nozzle pressure would be in the neighborhood of 106 feet while the horizontal reach would be 96 feet.

Ordinarily, for practical Fire Department operations, both the horizontal and vertical reach are determined by allowing one foot for each pound nozzle pressure; while the above does not give accurate results, still the results are satisfactory and particularly where wind might break the stream up and reduce its effective reach.

In problem two, the first part of your solution is correct, in that the nozzle pressure is 121 pounds.

The discharge in gallons per minute, however, should be 735 pounds instead of 493.

Vertical reach would be in the neighborhood of 110 feet and the horizontal reach 100 feet.

In using the value of K for parallel lines, the value of L (number of 50 foot lengths of hose in the line), is the length of any one of the lines, and not the total length of the three.

The value of K for parallel lines can be found by dividing the value of K for 2½-inch hose (with the given size nozzle) by the factor used to convert the parallel lines into a single line. For example, the factor employed to change four parallel 2½-inch lines into a single line of 2½-inch hose is 12.4. Then the value of K for four parallel lines of 2½-inch hose for a given size nozzle would be equal to K for 2½-inch hose for this same nozzle divided by 12.4.

If four three-inch lines of hose are used, then you would divide the value of K for 2½-inch hose and the given size nozzle by 32 to find what it would be for four three-inch lines with the same size nozzle.

"Simplified Fire Department Hydraulics," is the only book on the market at the present time devoted solely to the subject of fire department hydraulics. This is widely used in fire departments and by Civil Service examiners.

With regard to the value of hydraulics in the fire service, the benefits are indirect rather than direct. A thorough training in hydraulics develops judgment on the part of the men in operating lines and engines. When a man knows that he has to allow a certain pressure for each floor the water is sent vertically, and when he knows how much friction loss can be expected in the line of hose, it is quite a simple matter for him to determine approximately the pressures required at the engines. This saves time, and avoids many serious delays and errors.

The fact that practically all of the large departments now require a knowledge of hydraulics on the part of their membership indicates its practical value.

Of course, no member of a Fire Department can sit down at a fire with pencil and paper and figure out any hydraulic calculation. This should be done at the station, but practice in this work enables the men to judge quite accurately what pressure he will require of an engine for any particular layout.

Ammonia Explosions, etc.

To the Editor:

Please help me solve the following problem.

I have the "Fire Chief's Handbook," and one other book. One states that ammonia will explode and the other thinks differently. One states that mineral oils are not subject to spontaneous combustion and the other differs. M. I. V.

Answer: There is a wide difference of opinion as to the explosibility of ammonia. Before a gas will explode it must be inflammable. Many authorities, including "Industrial Fire Hazards," by Dana-Milne and "Fire Insurance Inspection and Underwriting," by C. C. Dominge and W. O. Lincoln, state that ammonia is not inflammable.

On the other hand, other authorities point out the large number of explosions that have occurred incidental to the rupture of ammonia piping or ammonia tanks, and contend that this is evidence that ammonia is explosive, and therefore inflammable.

If ammonia is inflammable, it is inflammable between very narrow limits; in other words, the percentage of ammonia and air must be kept between certain narrow proportions, otherwise the gas will not ignite.

"Industrial Fire Hazards" makes the following statement:

"Ammonia gas, while being compressed and before it is cooled is not pure, but contains considerable amounts of the lubricating oils in the form of vapor due to heat of compression. Heat with impurities tends to cause decomposition of the ammonia gas into its elements nitrogen and hydrogen, the latter very flammable and explosive. A break occurring in the machine at point of compression would permit the escape of hot gases favorable to quick fire or explosion.

"Fire records show that ammonia ma-

chines have been the cause of some serious fires, starting by explosion, after a rupture in the machinery or piping allowed ammonia to escape."

Mineral oils are not subject to spontaneous combustion nor are the fumes from such oils.

Wants to End Post of Chief

Voters of Akron, Ohio, will decide a very important question at the November election. An amendment is being considered to the city charter which will do away with the office of Chief of Fire Department, and also the Chief of Police Department, to be replaced by a Commissioner of Police and Fire, appointed by the Mayor.

Another proposed reform is to do away with the present system of administering fire and police pensions, through separate boards of trustees and to have one board with three Councilmen, and one man from each of the two departments.

Koltonski 25 Years in Service

Chief Alfred H. Koltonski, of Rutland, Vt., celebrated on April 16 the completion of twenty-five years in the fire service. He joined the department in Rutland on April 16, 1912, and has been Chief since 1924. He is a Past-President of the New England Association of Fire Chiefs and the Vermont State Firemen's Association. HARRY BELKNAP.

Chief Alfred H. Koltonski

County School Holds Graduation

Seventy-two persons were presented with certificates for having completed the first year training course of the Montgomery County Volunteer Firemen's Association.

Lieut. A. J. Bargagni, District of Columbia Fire Department, who served as instructor, presented the certificates. Dr. H. C. Byrd, President, University of Maryland, was one of the many speakers at the exercises.

A gold medal, donated by the Montgomery County American Legion Council for the firemen having the highest mark in the course, was presented to Harry Miller, Glen Echo.

By William Paul Babcock

WELL, there really are some people reading this blurb, I know now, because I have a very nice letter from Chief McAuliffe, of the Chicago Fire Patrol. Thanks a lot, Chief, for "them kind woids" and I hope I'll be seeing you at Washington, D. C., in June.

As further evidence that there are some Chiefs who appreciate what we are trying to do for salvage work and who desire to co-operate, here is a very practical suggestion from Chief R. J. Van Fleet, city of Hastings Fire Department, Hastings, Neb.

Chief Van Fleet sent me a nice sketch, which I regret I am unable to use in the space allotted to me, but I'll do my best to describe his unusual employment of a salvage cover.

He explains he has no room on his trucks for the usual baskets in which he might carry salvage covers. So, drawing upon his resourcefulness, and fired with a real desire to give his town 100 per cent fire protection, and faced with the further difficulty of storing sundry other items of equipment on his trucks, he killed the two birds with one stone and made a "sling" or carryall of a salvage cover, which, having ropes run through the grommets, and formed into handles at convenient points, he fastens securely to the side of a truck. When he reaches the fire grounds, the salvage-cover-carryall is unslung and tools and cover thus are made ready for use. The cover also forms a convenient debris carrier.

Now, get the picture that this is *not* a separate salvage corps, but a regular fire fighting unit with old-design trucks and a Chief who realizes fully the fact that all our tools are but auxiliary to *brains!*

* * *

I'd like to tell you all about the Nyack Fire Patrol boys' trip to Capt. "Bill" Cashman's school, but space does not permit. However, a very interesting and accurate description of this famous Salvage School appeared in the April number of *The Rotarian*, done by that versatile writer, Paul W. Kearney. If you're not a subscriber, surely you know some one who is, and you should see that the article is especially called to the attention of every merchant, manufacturer and professional man in your town. It ought to facilitate your procurement of covers. And when *you* are in or near New York City, take time and call on Capt. Bill and see for yourself how little you know about salvage work. . . . I did!

* * *

With the passing of "Smoky Joe Junior" the profession has lost one of its strongest advocates of salvage work. An officer of the New York Fire Department does not have to worry about salvage operations to cover his job. Yet, in all his lectures Chief Martin stressed its importance as an essential evolution. I shall miss him. The officers and members of the Nyack Fire Department will miss him."

Rural Dial Telephones and Rural Fire Fighting

A proposition by the New York Telephone Company to install dial 'phone service in rural exchanges in New York State, has aroused the opposition of Fire Departments in Putnam County. Chief Henry F. Drake, of Clinton Corners, Secretary of the Mid-Hudson-Harlem Fire Chiefs' Association, has invited Mr. Golding, of the Poughkeepsie Branch of the telephone company and Seth Cole, of the New York Assembly, to visit the next meeting of the association to discuss the situation, and see if some remedy may not be devised.

The objection to the change, as visualized by those in opposition to it, is that at present the local operators, with the consent of the telephone company, notify the Fire Department immediately a call is received, and in some cases, also with the consent of the company, switches have been installed in the local telephone exchange, so that the operator can start the siren sounding, when an alarm is received.

Of course, all of this service will be discontinued, when dial 'phones are installed, to the great detriment of the Fire Department and with loss of fire protection to the subscribers. As Chief Drake points out, this is extra service by the telephone company, but it has not only been permitted by the company, but also it has been admitted by that company in its advertisements in farm journals that the telephone is of great service in case of fire.

$1,000,000 Fireboat Approved

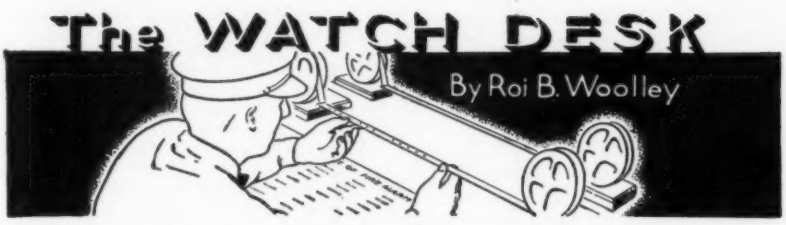
The Board of Estimate, New York City, has approved a report recommending a $1,000,000 fireboat. Gibbs & Rice, marine architects, will receive a fee of seven per cent of the estimated cost of the boat, less $6,300 that was paid during the preliminary work.

The boat will be 134 feet long by thirty-two feet wide and will have a draft of nine feet. It will have a displacement of 561 tons. The craft will have a pumping capacity of 16,000 g.p.m., at 150 pounds pressure, and a speed of 16.5 knots. It will be provided with a two-way radiophone.

Report of Howard County, Md.

In the annual report submitted by Chief B. H. Shipley, Howard County Volunteer Firemen's Association, Ellicott City, Md., he calls attention to the good work of the Fire Prevention Division in eliminating a number of serious fire hazards.

The association answered 105 alarms the past year. The approximate value of property involved was $188,975, approximate fire loss, $27,488, and the per capita fire loss $1.08. In answering an alarm, the average miles per run was 10.5, and about five men responded per call.



Our inquiring reporter overhauls the firemanic news of the day.

Fastidious Firemen Give Formal Service

Firemen of Loveland (Col.) give swell service. When Mrs. Charles Jones called F. D. to extinguish blaze in chicken coop five handsome firemen responded, dressed in "boiled" shirts and black ties. Despite their fastidious service however, fifteen chickens perished.

Latest in False Alarms

Lorain (O.) firemen are all 'het up' around the collar over culprits responsible for the game (?) of turning in two alarms simultaneously and betting on the company to first answer the alarm.

Firemen 'Net' Human Torch

Edward J. O'Mara, aged 28, Philadelphia (Pa.) went cuckoo, took to roof of a vacant two story building and threatened to jump. Firemen spread net below and others went to roof to corner "nut." When O'Mara saw them he set fire to his clothes and jumped. Quick work of net-holders prevented injuries from the fall and reduced body burns to minimum.

Whistle Gets "Frog-In-Its-Throat"

Quincy (Cal.) F. D. is taking no more chances on its alarm whistle. Failing to blow upon the occasion of an alarm on account of cold weather authorities ordered said whistle blown "every Saturday afternoon hereafter." That's quite a time between blows isn't it? Most communities test their alarm horn or whistle daily at least.

Where's Charles Mensing?

We're seeking to hear from our Toledo (O.) correspondent, one Charles Mensing, dispatcher at fire alarm headquarters who's been shooting 'em out since he was able to pound a key. Also, where's Tyler Green, Superintendent Fire Alarm Telegraph Bureau, T F D?

Life Hung by a Thread

Two hundred feet above ground steeplejack Robert Berieter, Granite City (Ill.) lost control of his 'bosun's chair,' dropped 80 feet, when luckily for him coil in hoisting rope caught him by heel. He dangled, head down, 120 feet above ground where unable to help himself he stared death in the face. Meantime local firemen were called, but their longest ladder was far short. Then East St. Louis responded with longer ladder. Papers recount that their ladder "went up 115 feet and stopped 5 feet from victim" but that's a new "aerial" on us. However, firemen went up stack and from top heaved a coil of rope by means of which they inched themselves to Berieter. They got a rope around him, cut the line that held him fast, lowered him to two men on ladder. In hospital it was reported Berieter's injuries were only wrenched leg.

Fire Company Misses Alarm

Transfer and fining of some members of a New York City fire company not long ago, and resulting publicity, disclosed fact that engine company failed to respond to a second alarm to which it was due. Midnight watchman read signal all right but misread running card and failed to turn out company, notifying commanding officer "we don't roll." Next day there was plenty excitement, investigation, and whathaveyou. Rule of department is members must "hit the floor" when alarm sounds, but 'tis hinted the brothers don't allus do it.

News Flashes

Two firemen of Jamaica (L. I., N. Y.) were injured by being flung off apparatus while returning from fire; a cop and his car got in way of truck necessitating a quick swerve. . . . Chicago and New York firemen engaged in spelling bee by radio (upon advice of counsel we refuse to state who won). . . . When fire destroyed home of J. R. Kidd, in Abbington (Pa.), it consumed thesis he had spent five years to prepare. . . . Firemen searching ashes of shack where recluse, Mrs. Mary McLaughlin, aged 68, Philadelphia (Pa.), found bank books showing deposits of $1,100. . . . Four-year old Kenneth Cole, seeing flames spreading from oil stove fire, raced through house to warn parents and eight brothers and sisters; they were all saved, but Kenneth died in the fire. . . . Armi Marty's frisky colt in Fond Du Lac (Wis.) kicked a lantern into a pile of straw, started fire, which consumed barn, four houses, 15 head of cattle, 100 chickens and coop. . . . Alex Butkin, Cleveland (O.), had toothache —pulled fire alarm—firemen consoled him with two days in jail. . . . Seventeen persons killed in a fire in two dormitories in Yakutsk (Siberia). . . . In Hammond (Ind.) fireman Jim Cross shinnied up tree in his yard, straddled limb needing amputation. He sawed it in record time only to crash to ground with it. Just a matter of sitting on wrong side of cut. . . . A bird's nest in Whitehouse (O.) short-circuited alarm system, ringing alarm. . . . Helen Franklin (New York City) paid $20 fine for slapping a fireman who, she said, arrived too late. . . . Thirty blocks were destroyed in a fire in Manilla, 20,000 left homeless. . . . Simple little pushcart fire in N.Y.C. overcame 8 firemen; pushcart was in basement of tenement. . . . For two hours two barges loaded with explosives menaced shores in a 40-mile wind in Gravesend Bay (N. Y. C.); police, coastguard fireboats and others managed to control situation. . . . Bird, carrying a lighted butt to nest in eaves of church (Sydney (U.P.), reported to have caused fire which destroyed edifice. . . . Miss Katherine Bertling, school teacher, Cincinnati (O.) was burned to death and sister Amelia seriously injured, when comb in former's hair ignited from electric hair dryer.

A Patchogue Problem

Delicate problem in fire-fighting jurisdiction faced William Shinn, Chief of Patchogue Vol. F. D., when he and his men answered alarm at 2 a.m. to find fire in two story building just 100 feet across village line in North Patchogue's fire district. There was a stiff wind and delay in getting action, it seemed to Shinn, might be serious. Yet there's strict orders about firemen staying within their own bailiwick. Chief Shinn compromised by having his men park their truck well inside Patchogue line, then stretch across the boundary to extinguish the blaze. Damage held to $1,500, mostly water.

Meanest Thief

Firemen of Anna (Ill.) are said to be relying upon vocal technique to clear streets on their fire runs. Seems some miscreant entered the F. D. garage and swiped the siren! Why not the truck and all? Ask us another!

Snakes! — or a Five-Hour Battle

Robert Upshur, demon reporter of Greenwood (Miss.) F. D. sends us story of a rat that was victorious over 5 ft. rattlesnake in battle staged at Greenwood's No. 1 fire station. Local fisherman gave F. D. the rattler, which was put in box. A pugnacious rat got into box—and the battle was on, the rat emerging victorious and indifferent to the numerous snake bites he received. Deponent saith not what was fed the rat to make him such a battler of the rattler.

New Chief Faces New Problem

Scarcely had O. G. Smith been elected Chief Larchmont F. D. when he received request from prominent woman citizen of village to "bring his department down and build a smudge to smoke the hornets out of her barn." "Hell," sez Smith, "I thought this was a Fire Department, not an apiary."

Note to contributors: If you do not read your news contribution in the next issue of FIRE ENGINEERING don't despair —if it's suitable it will ultimately find its way into print.

Editor, Watch Desk.

WHAT DO YOU KNOW?

The Editor of "The Watch Desk" welcomes contributions from readers of FIRE ENGINEERING that briefly give facts about interesting, odd things that have to do with fires, fire fighting, etc. Address "Editor, Watch Desk."

WHAT'S BURNING

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of April, 1937. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending April 30	Loss in Thousands of Dollars
Cincinnati, Ohio—Plant of American Waterproofing Co. in Fairmount, a suburb	$ 50
Zion, Ill.—Shiloh Tabernacle and Radio Station WCBD	700
Philadelphia, Pa.—Grain elevator and warehouse of H. B. Cassel	80
Montreal, Que.—Plant of Merck Chemical Co., destroyed	100
Atlantic City, N. J.—Hotel Grand Atlantic and adj. property	170
East Coulee, Alta.—Tipple of Atlas Coal Mine destroyed	125
Lawrence, Mass.—Social Naturalization Club destroyed	65
Trout, La.—Property of Perfection Oak Flooring Co., destroyed	65
San Francisco, Cal.—Acme Paper Co. and Paul Koss Supply Corp.	80
Princess Anne, Md.—Property occupied by Misses Miles and Messick	50
Bloomington, Ind.—First M. E. Church destroyed	200
Kokomo, Ind.—Plant of Kelvie Press, Inc., damaged	50
Detroit, Mich.—Bldg. occupied by C. E. Jamieson & Co.	200
Stratford, Conn.—Raybestos-Manhattan Co., damaged	80
Tampa, Fla.—Business property at Cass and Franklin Sts.	160
Tenaha, Tex.—School bldg. and adjoining property	60
Clovis, N. Mex.—Three business buildings destroyed	170
Longview, Tex.—Four business establishments damaged	50
Andrews, N. C.—F. P. Cover & Sons Tannery, Inc., damaged	50
Charlotte, N. C.—Terminal of Queen City Coach Co., destroyed	65
Detroit, Mich.—Plant of Rex Printing Co., adj. property	60
Briarcliff Manor, N. Y.—Residence of J. J. Melady, destroyed	80
Freeport, Ill.—Stukenbergs dept. store destroyed	80
St. John's, Newfoundland—Government Fisheries biological station at Bay of Bulls	150
Canyon City, Ore.—Downtown business property	125
Calaid, Me.—Beckett & Co., block, housing business establishments	50
Woodside, L. I., N. Y.—Business property at 31st Ave. & 51st St.	50
Brooklyn, N. Y.—Store and whse. of J. Michaels, Inc., damaged	50
Cable, Wis.—High school building damaged.	60
Hawkesbury, Ont.—Mill of Hawkesbury Lumber Co., destroyed	100
Fitzgerald, Ga.—Property of Fitzgerald Peanut Co., damaged	60
Virginia Beach, Va.—Dwellings of Stoney Drake and Col. H. C. Manney	60
Bloomington, Ind.—Plant of Bloomington Crushed Stone Co.	65
Waterproof, La.—Building owned by Horace Seman, adj. property	80
Snyder, Okla.—Three buildings in business district	150
Wisconsin Rapids, Wis.—L. M. Nash block damaged	200
Joplin, Miss.—Duquesne Public School destroyed	50
Beaumont, Tex.—Property of Union Furniture Co., damaged	50
Traverse City, Mich.—Grand Traverse County Courthouse damaged	55
Algona, Iowa—Call Opera House and adj. property	50
Louisville, Ky.—Louisville Chair & Furniture Co. plant	50

* * *

A Correction

Chief Paul L. Amheiser of the Altoona, Pa., Fire Department advises us that fire loss figures as given in our "What's Burning" column of the February issue for a fire occurring in Altoona were in error. Chief Amheiser states the loss did not exceed $150,000, instead of $625,000, as listed.

Meeting in E. Weymouth

There was an attendance fifty-two members at the meeting of the Massachusetts Fire Prevention Association held in the Central Fire Station, East Weymouth. Deputy Chief Fred W. Webb, Weymouth, made the address of welcome in the absence of Chief J. Ralph Bacon, who was confined by illness in the Weymouth Hospital. Selectman Joseph Chehan also spoke. Luncheon was served in the fire house.

A demonstration of "Quick Foam" for extinguishing oil fires was given in the rear of the station by A. R. Schofield, of East Weymouth.

Captain Charles F. Bell, of the Brockton Fire Department, presided at the meeting. Lieutenant T. R. Monroe, of the Fire Prevention bureau of the Haverhill Fire Department, read a paper on th fire hazards of celluloid and pyroxlin products.

HARRY BELKNAP.

22 Oil Cars Destroyed

Twenty-two tank cars of the Texas & Pacific Railroad were destroyed in a wreck and fire near Abilene, Tex. The crew escaped injury. However, the fire occurred at a point where there was no water supply, and all the firemen could do was to police the grounds.

Tank Cars Burning After Derailment

Thirteen of the derailed cars contained oil. Earth dikes were thrown up around the fire, to prevent the oil from flowing away. Some of the cars were pulled away from the fire grounds and were saved.

Crane Operator Trapped by Fire

Oil drippings on a pier in Boston, Mass., alongside of which the S. S. San Gil was tied, is believed to have started a fire which resulted in the injury of three firemen, and in the spectacular rescue of a crane operator, who was trapped at the end of a crane boom.

The fire in East Boston threatened to damage the Simpson drydock and the San Gil.

Oil had dripped on to the wharf from the punctured hull of the tanker Halo, which had been brought to the shipyard the day before for repair. An acetylene torch spark set fire to the oil.

The crane operator was trapped in his cab when fire developed near the crane. Flames swiftly rushed upwards and enveloped the crane. The operator managed to crawl to the end of the 100-foot boom and he remained there until rescued.

The fleet of tugs in the harbor is credited with the rapid extinguishment of the flames. At the first sign of the fire, they rushed to the scene. A line was quickly tied to the San Gil and the boat moved away from the pier. Chief Pope was in command of the fire fighters.

Two men who rushed on the boat to see that all had reached safety, were overcome by the smoke and were carried off by firemen.

The illustration on the cover shows the fire being fought.

Fire Breaks Out in Prison

Fire of undetermined origin destroyed a huge garage at the Connecticut State Prison at Wethersfield, Conn., a tower on the northeast side outside the prison walls, and a workshop of the State Highway Department, on April 23. Damage was estimated at $30,000.

More than 15 cars were destroyed in a blaze which for a time threatened to sweep over the enclosure of the prison proper. Hartford sent several fire companies under command of Acting Chief Michael T. Keena.

Flames, which leaped 50 feet into the air, and the extreme dense smoke, made it appear for a time that the fire was within the prison walls. When the fire broke out the prisoners were in their cells, having just finished their lunch. The observation tower which caught fire was the one in which John Mullins, a guard, was on duty when he discovered the fire.

Smoke was so dense that for a time the entire northeast section of the prison was invisible through the blue haze. Despite the fact that the fire was out "in the open" firemen battled the flames under the handicap of choking fumes

from the rubber tires and upholstery of the automobiles.

In company with the five fire companies and two trucks from Hartford, 45 State Police troopers dashed from all parts of the state to Wethersfield on an emergency call from the Hartford headquarters.

THOMAS F. MAGNER.

700 Lose Lives in Theatre Fire

Seven hundred lives were lost in the most appalling conflagration that ever occurred in recent years in Manchuria, when during a New Year's celebration in a theatre on February 14, a crowd of 1,500 persons were trapped in a burning theatre.

Front of Theatre After the Fire
The x indicates the main entrance to the building in which 700 persons lost their lives.

Fire broke out at 7:50 p.m., Saturday evening, and before it was under control, it destroyed more than thirty houses in the neighborhood. Half of the victims were women and children.

The flames were believed to have started from a candle used by an actor in his dressing room, and allowed to burn unattended. The theatre was jammed so that doors were locked to hold back the crowd. Fire broke out from behind the proscenium and spread rapidly towards the ceiling, turning the inside of the theatre into a roaring furnace. Panic stricken the crowd rushed towards the exits but before they could fight their way out, the gallery collapsed, trapping several hundred underneath.

Through the combined efforts of the firemen and the Japanese troops, the fire was brought under control several hours later. There were many touching scenes as relatives of the victims gathered around the charred walls of the destroyed theatre. S. KIUCHI.

Springfield Host to Chiefs

An exhibition drill by members of the Springfield Fire Department was part of the program at the meeting of the Fire Chiefs' Club of Massachusetts, held in Springfield, Mass., on April 21 with luncheon at the Highland Hotel.

Chief Herbert C. Root, Springfield, acted as host. Seated at the head table for the luncheon were Chief Charles L. McCarthy, Worcester, President of the club; Chief William H. Hill, Belmont, Secretary; George O. Mansfield, Chief Fire Inspector, Massachusetts Department of Public Safety; Ex-Chief William C. Shepard, Pittsfield; Chief George L. Johnson, Waltham; Ex-Chief William H. Daggett, Springfield; Ex-Chief Thomas H. Mahoney, Westfield; Chief Patrick J. Hurley, Holyoke; Fire Commissioner George D. Stocker, Holyoke; Ex-Chief Jones, West Springfield, and Chief Root.

Ex-Chief Mahoney, Westfield, was elected an honorary life member. A message of greeting was sent to Chief Augustin J. Cote, of Woonsocket, R. I., who is ill.

Captain Richard M. Bolster, Drillmaster, Springfield, had charge of the exhibition which included drills with extension and scaling ladders. The new vapor spray nozzle invented by Chief Henry W. Taft, of Norwich, Conn., was displayed, as well as Elkhart and Akron nozzles.

A new Sanford-Ford 500-gallon combination pumper and hose wagon was exhibited by Leonard Falt, of the Sanford Fire Apparatus Company. This pumper has since been delivered to Hebron, Conn. HARRY BELKNAP.

Son of "Smoky Joe" Dead

Joseph B. Martin, Jr., Battalion Chief of the New York Fire Department, and son of "Smoky Joe" Martin, retired Assistant Chief of the Department, died on April 24 as the result of an operation for double hernia. He was forty-six years old.

He joined the department in 1916. A year later he resigned to join the army, and then rejoined the fire service in 1918. In 1925, he was promoted to Lieutenant; Captain, in 1928, and in 1934, Battalion Chief. He was assigned to the same battalion and office formerly held by his father. His name appeared on the Honor Roll six times, and he received several other citations.

Battalion Chief Martin is survived by his widow, his father, four children, four brothers and a sister.

Department and Other Reports Received

Charlotte, N. C.—Tenth annual report of the Fire Department, Charlotte, N. C.; sixty mimeographed pages.

Denver, Col.—Annual report of the Fire Department, Denver, Col.; thirty-six pages, illustrated.

Melbourne, Australia—Metropolitan Fire Brigades, Melbourne, Australia—annual report.

Connecticut State Firemen—Proceedings of the fifty-second convention of the Connecticut State Firemen's Association; illustrated, eighty-nine pages.

Carrying Out the Victims After the Fire

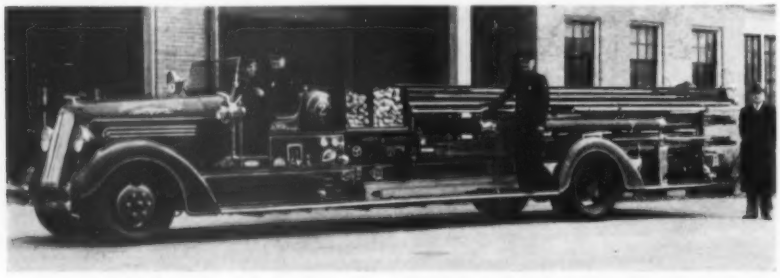
NEW SUBURBAN QUAD DESIGNED FOR NEEDS OF SMALL COMMUNITY

Several Unusual Features Incorporated—Hose Location Designed for Rapid Unloading—Booster Tank Mounted Low—One Man Can Take Off Booster Hose at Rear of Apparatus

By D. D. Gardner
Chief of Fire and Police, and Manager of Service,
Grandview Heights, Ohio

SEVERAL months ago Grandview Heights placed in service a new quadruple combination apparatus, embodying several unusual design features that have since proven successful in practice.

The 1½-inch hose is loaded in two cross compartments located in the rear of the driver's seat, permitting rapid unloading to either side of the apparatus. This hose is carried ready-connected to a separate line from the pump and is charged by simply opening the line valve. The hose is loaded 200 feet in the front and 300 feet in the rear compartment, giving a choice of either length and a makeup combination of the total 500 feet.



Quadruple Combination Apparatus

It is equipped with 600-gallons-per-minute centrifugal pump, 100-gallon booster tank, 1,700 feet of hose and 220 feet of ladders. (The men, left to right, are: Lieutenant McCollister, Driver Starner, Fireman Turner and D. D. Gardner.)

The booster tank is mounted low-down between the main frame members, where it is accessible for filling and where the operator can easily check the contents gage.

One Man Can Remove Booster Line

The 1-inch booster hose is carried on a reel at the rear of the apparatus and the principal feature here is that the hose guide is so arranged that one man can take off the line to either side.

The brakes are vacuum operated and the controls are so arranged that the truck handles easily. The overall height is about six feet and the vision to the rear is unobstructed.

The pump, of 600 g.p.m. capacity, is operated, with gages and controls located within easy reach of the operator. The vacuum pump is vacuum operated with push button control.

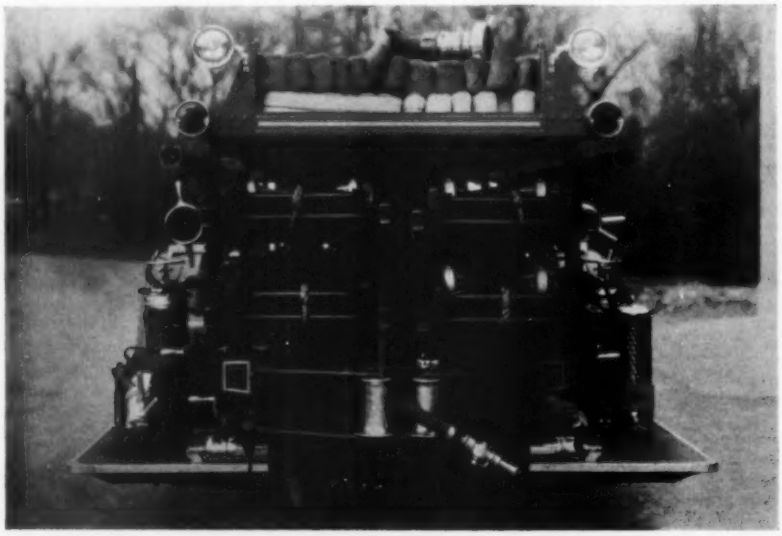
Hose and Ladder Equipment

The 2½-inch hose is carried in a tray located above the ladder rack and a full length foot board makes loading easy, as well as giving weather protection to the ladders below. The 1,000 feet of 2½-inch hose, 500 feet of 1½-inch hose and 200 feet of 1-inch hose give a total capacity of 1,700 feet in well distributed sizes.

The ladder equipment was carefully worked out for the particular needs of this community and consists of five extension ladders as follows: one 40-foot, two 35-foot, one 28-foot and one sixteen foot. There are three roof ladders: two sixteen foot and one twelve foot. Two folding ladders: one twelve foot and one ten foot complete the list. For extreme conditions, one of the sixteen foot roof ladders can be used as a fly on the 40-foot extension ladder, increasing the range to fifty feet.

This new quad, which was built by Seagrave, supplements the 12 year old 350-gal. triple combination apparatus that is now kept in reserve and in summer months regularly used for grass fires.

Grandview Heights, a suburb of Columbus, Ohio, is a city of 6,500 people. Principally a residential community, it has, however, four mercantile districts and one industrial district.



A One Man Booster Line

When the reel brake is released, one man can take off the booster hose to either side. Ladder racks are low and ladders easily handled. Note increaser fitting carried on 2½-inch hose for supply line hook-up.

New Hampshire Chiefs Meet

Chief Leroy P. Mansfield, Wolfboro, was elected President of the New Hampshire Fire Chiefs' Club at the annual meeting which was held in the Eagle Hotel, Concord, N. M., on April 14.

Chief Edgar K. Wheeler, of Franklin, was chosen First Vice-President; Chief A. L. Martin, Amherst, Second Vice-President, and Chief Albert C. Melendy, Nashua, was re-elected Secretary-Treasurer.

The following were named as members of the Board of Directors: Chief Charles H. French, Manchester; Chief William T. Happny, Concord; Chief Arthur W. Spring, Laconia; Chief William F. Woods, Portsmouth, and Chief Fred M. Sargent, Sunapee.

Speakers at the meeting were Chief Carl D. Stockwell, Burlington, Vt., President, New England Association of Fire Chiefs; Chief Thomas F. Burns, Bridgeport, Conn.; Chief Michael W. Lawton, Middletown, Conn., and Chief Charles L. McCarthy, Worcester, President of the Fire Chiefs' Club of Massachusetts.

An invitation was received from Chief Arthur W. Spring, of Laconia, to hold the June meeting in his city, and the offer was accepted. Frank M. Tiffany, of the Gamewell Company, was elected the first honorary life member of the club. The retiring president was Chief Ralph S. Goodrich, of Epping.

HARRY BELKNAP.

Brookline Orders Pumper

Chief Selden R. Allen, Brookline, Mass., has ordered a 1,250 g.p.m. American-LaFrance pumper, with an enclosed body. Inside the body are two longitudinal boxes, with an aisle between, with each box holding 700 feet of 2½-inch and 150 feet of 3-inch hose. In a divisional box is carried 500 feet of 1½-inch hose. Firemen ride to the fire seated on these boxes.

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1 Set "Fire Chief" Signs

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"Fire Dept." Signs

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When we started this business 34 years ago, it was sufficient for investors to hold *only* stocks and bonds. Hence we were interested in protecting only stocks and bonds.

- Today however an investor is taking great risk in buying *only* stocks and bonds. Every conservative business man and investor should today have at least 25% of his funds in real estate, commodities, and other forms of real property.
- In view of the above, we have bought an interest in companies best prepared to protect buildings, merchandise and assets other than stocks and bonds. We are anxious also to help associations and publications which are striving to prevent fire losses.
- For the same reason investors should take more interest in fire protection and back up firechiefs in their plans and efforts. A good fire department is a good hedge against inflation.

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By ROGER W. BABSON, *President*

Babson Park, Mass.

The FEDERAL '77' DOUBLETONE SIREN

with the Red Flashing Light

CUTS THRU ALL OTHER NOISES

SPECIFY FEDERAL "77"

Built Chockful of Action for its Size. Rugged in Construction to withstand abuse on busy piece of equipment.

1. Newest innovation a two-tone blast.
2. Large red flashing light.
3. Long rolling action after current is cut off more than two minutes—that saves your battery.
4. Electric Brake—touch of button stops roar instantly.
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FOGNOZLS produce a solid mass of fog, not spray or mist, permitting a speedier, safer and more economical means of combatting and extinguishing all types of fires. FOGNOZLS are available in many types including the applicator type which produces fog only, and the shut-off design which affords fog and solid stream. There is only one FOGNOZL, the Griswold FOGNOZL. Write today for full particulars. The Fog Nozzle Co., 1520 East Slauson Ave., Los Angeles, Calif.

AFTER all, a good badge is a sensible investment. Not everyone can wear a fireman's emblem of service. You men who have devoted your lives to saving life and property should be proud of your badge.

You will be if you wear a BRAXMAR BADGE. Over fifty-five years of experience goes into every badge you buy.

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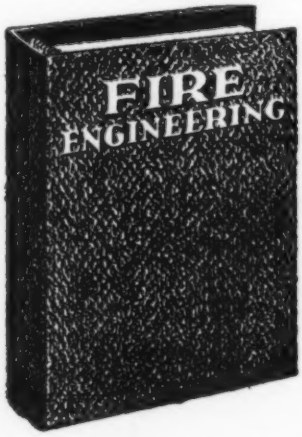
KEEP YOUR COPIES of FIRE ENGINEERING *in this handy* BINDER



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PORTABLE PUMPS PROVE VALUE IN FIGHTING FIRES IN BRUSH

Pumps Carried on Backs of Fire-Fighters Have Also Shown Worth in Stopping Roof Fires, and Fires in Residential Buildings

WITH few exceptions, water is the best medium for extinguishing ordinary fires. By reducing the temperature of the material to a point below that of ignition, the spread of fire is stopped, and the fire extinguished.

This principle is employed in fighting brush fires and shingle roof fires, where a large area must be cooled to make it unsuitable for the support of combustion. Heavy hose streams result in a waste of water, without an increase in efficiency.

Hand Operated Pumps on Backs of Fire Fighters

In fighting brush fires, many departments have found that satisfactory results were obtained by the use of hand operated pumps worn on the backs of the fire fighters. The tanks of the Indian fire pump hold about five gallons of water, and connected to the water can is a short length of hose. Although this pump is small, it can throw a continuous stream for a distance of about fifty feet, and it has been particularly effective in fighting fires which develop during the dry season in brushland. Men carrying these tanks are not limited in operation by the extent of a hose line, but can move quickly to wet down ground in advance of the flames.

Forty pumps of this type were credited with saving the town of Brentwood, Long Island, after fire had destroyed about two thousand acres of wooded land.

Bad Gasoline Fire Prevented

Assistant Chief William Kimball of Colonia, N. J., found them an effective means of preventing a bad gasoline fire. Here is his story:

"About dusk one windy day, the siren sounded. In a few minutes we were on the way, following an angry glow in the sky. When we arrived at the scene, a five-acre field surrounded on all sides by small houses, was a regular inferno. Frantic home owners were running in all directions accomplishing nothing, but adding plenty to the confusion.

"A terrified old man ran up and begged us to save his garage in which was stored a fifty gallon drum of gasoline. Two of us ran around the field with our Indian fighters on our backs and our hearts in our mouths, and we got there just as the flames started licking the bushes at the base of the garage.

"In less time than it takes to tell, the streams had knocked the six-foot flames down, and the gasoline hazard was no more. In less than ten minutes we had the whole field under control, and maybe the residents in that section weren't proud of their volunteer company."

Used as Secondary Line of Defense

This type of pump, can also be used as a second line for big fires. An interesting experience is related by Chief Delbert L. Kinney, Berne, N. Y.:

"When our town clerk's home was afire, three men from our Indian pump squad went in with pumps and went into action and did a nice job, supplementing the chemical and hose lines that were being used by other firemen. In fact, we do practically all the wiping up of inside fires with our pumps."

Useful in Roof Fires

These portable pumps have demonstrated their worth in fighting roof fires. A bad roof fire was fought by the Fire Department at Charleston, Ark. Alfred E. Schmuki, describes it:

"An alarm came in on Sunday, February 25 at 11:15 a.m., from the Sacred Heart Church Parish House, which was a roof fire well under way and a high wind blowing. Two men with the Indian pumps on their back, climbed the ladder to the roof and went into action, and did they do the work. I've been on the volunteer force for twelve years and I have never had results like this.

"It was a surprise to all firemen and to fifty Councilmen who were there, as we not only saved a $1,500 home, but only used the two Indian pumps."

Floodlighting Truck for Newark, N. J.

A modern floodlighting and emergency truck was recently delivered to the Newark, N. J., Fire Department. Michael P. Duffy, Director of Public Safety, in his desire to make the Newark Fire Department outstanding in its equipment, conferred with John Keenan, Fire Commissioner, and Chief Towey. This group, after consultation with John Kane, Engineer of the Department of Public Safety, and Joseph P. Hackett, Mechanical Engineer of the Fire Department, specified a truck which would include not only a large battery of floodlights, but also a high power searchlight for use in emergency work at the waterfront, or at other points where a strong, intense beam might be needed.

Hagin & Koplin, Ford Distributors for Newark, contracted for the truck and body, the later of which was made by The Peter Wendel & Sons Body Company, of Irvington, N. J. The electrical installation was made by John C. Clendenin, Electrical Engineer, 420 Lexington Avenue, New York City.

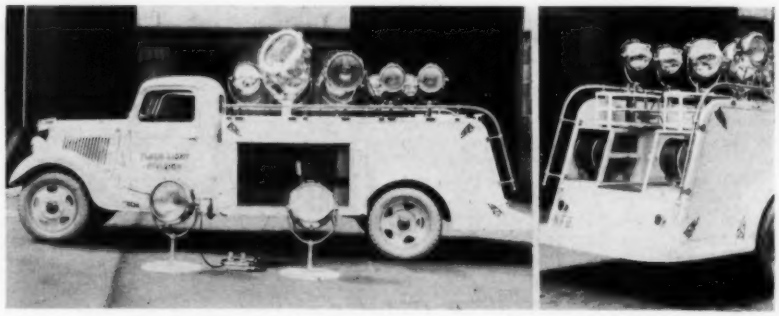
The construction of the truck presents some unusual features. The chassis, complete with cab, is a Model AA Ford, with a 157-inch wheel base, booster brakes and dual rear tires. The cooling system on the engine is of the heavy duty type. The body is all steel and of rigid construction suitably braced and welded.

The electrical system obtains power from a 10-kilowatt generator suspended in the chassis and driven directly from a heavy type power takeoff attached to the side of the transmission. The power from this generataor, which is designed to deliver a 110 volts direct current at an engine speed of approximately 1,500 r.p.m., is passed through a voltage regulator, which maintains constant voltage, irrespective of engine speed or load. With this system, it is unnecessary to keep an operator constantly at the throttle, in order to control the voltage, as the lamps are connected or disconnected from the circuit.

The outlets for receiving the power from the generators are of the watertight type and are placed at convenient points around the inside of the body. These outlets, as well as those at the end of the circuit on the cable reel, are controlled by a switch panel made up with the circuit breaker type of switch and with pilot lights on each circuit. This switch panel is placed in one of the compartments at the side of the car, where it is protected from the weather and is readily available for operation.

On either side of the body is a compartment which houses the live circuit reels. Each one of these reels contains 300 feet of No. 8, two conductor, special rubber covered cable. At the end of these cables are two-way outlets. In addition to these two cable reels, there are also eight small reels, each containing 100 feet of No. 10, two conductor, special rubber covered cable. These small reels are stowed away in compartments in the car.

The floodlighting equipment consists of four 250-watt lamps, four 500-watt lamps and two 1,000-watt lamps, all with lightly stippled lens for floodlight use. These are attached to stanchions at the side of the car with a tubular support, so that they may be removed and assembled on wheel bases, when it is desired to operate them apart from the car. These lamps are chromium



Two Views of the Floodlighting Truck in Use at Newark, N. J.

plated and equipped with handles so that they may be easily carried.

A special high-powered searchlight with 1,900,000 beam candle power is assembled in the centre front of the car. The base of this light is so arranged that the lamp may be elevated above the cab and its beam projected in any direction without interference.

Chief Allen Finds Lighting Unit Valuable

The new floodlighting car of the Brookline, Mass., Fire Department, has demonstrated its value in fire fighting, according to Chief Selden R. Allen. He reported:

"It has cut down accidents for us and has improved the efficiency of our men. They work faster and better and in greater safety, for they can see what they are doing.

The lighting unit, a standard Ford V-8 panel truck, carries two 2,000-watt generators similar in design to those used for lighting farm homes. It carries a 1,000-watt flood light, two 500-watt, three 250-watt flood lights, and a 500-watt searchlight. The small lights are for inside illumination. The two generators work automatically so that when the capacity of one is reached, the other cuts in.

The car also has a submarine light for underwater use, and a vapor-proof light for use in vats and tanks.

Lighting Truck of the Brookline, Mass., Fire Department

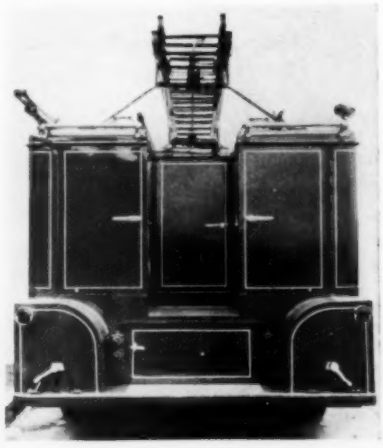
New Emergency Car at Mt. Vernon

The most modern conception of the service to be rendered by a progressive Fire Department guided Commissioner William A. Hallahan and Chief John Gibson in designing the Emergency Car, which was placed in service at Mount Vernon, N. Y., on April 15.

The apparatus, which was built by the Ahrens-Fox Fire Engine Company, is to be permanently located at the quarters of Engine 4, on Sixth Avenue, and will respond to all box alarms and to special signals.

A combination Flood Lighting, Rescue and Salvage Car, the new machine takes the place of three units and combines the special duty service of the department in the hands of a picked and trained crew, operating a piece of apparatus which is worthy of mention because of its unique design and complete equipment of appliances, which range from a 2,000-watt lighting plant and ten-ton hydraulic jacks, to a tiny "gadget" for cutting rings off of injured and swollen fingers. The body, which is ten feet long, is built of sheet steel on a fire apparatus chassis, with a wheel-base of 162 inches.

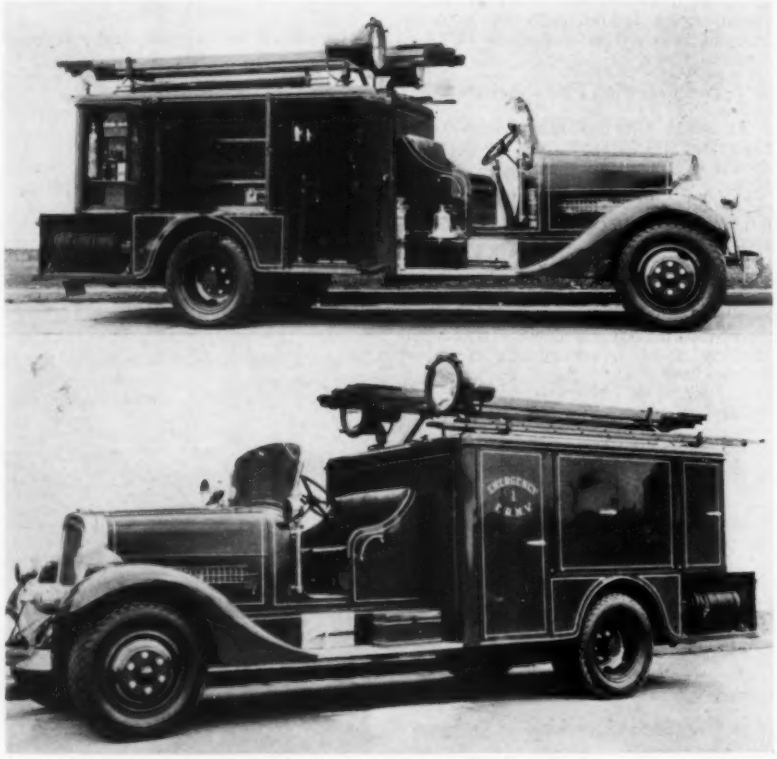
In a transverse compartment at the forward end of the body is mounted a fully automatic Model K Kohler electric plant of 2,000-watt capacity generating 110-volt D.C. Two 1,000-watt lights are permanently mounted on the top of the apparatus, and six 250-watt portable lights are carried in a center compartment. Two cable reels carry 1,000-feet of lighting cable on each reel.



Rear View of Car

Thirty-six 12 x 18-foot salvage covers are carried in side compartments, and in addition to the flood lighting and salvage equipment, the following fire-fighting and rescue equipment is conveniently stored in compartments and mounted at

(*Continued on page* 249)



Two Views of the Mt. Vernon Emergency Car

UNION MADE

Signal FIREMEN'S UNIFORM SHIRTS

Styled Right—Priced Right

Cut full and roomy. Guaranteed not to shrink. Choice of medium blue, heavy fine yarn, fast-color sanforized chambray or navy blue tub-test percale. Two popular styles, Soft Collar Attached or Neckband with two Detachable Collars.

SPECIAL OFFER
To Fire Chiefs

If you are interested in a standardized uniform shirt for your department and your dealer cannot supply Signals, write us. Give us size and style preferred and we will submit a sample shirt prepaid for your inspection and quote prices.

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You get quicker "all outs" with Homelite portable floodlighting on the job. For these low-cost units provide the brilliant light that enables your men to work more efficiently—more safely.

Weighing only 89 pounds complete with built-in gasoline engine, can be moved quickly to wherever you need it. Yet it generates 1250 watts—operates several large floodlamps. Furthermore, its rugged built-in air-cooled engine starts instantly and cannot flood, freeze or overheat.

Thousands of Homelites are in use—not only fighting fires but giving valuable aid on accidents, riots, drownings and salvage work after heavy thunder storms. Write for bulletin.

HOMELITE CORPORATION
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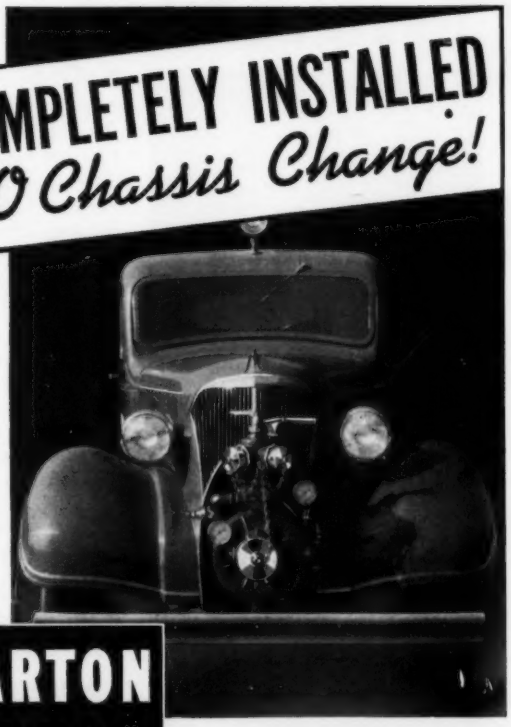
NO Chassis Change!



BARTON FIRE PUMPS

GEAR DRIVE

NOTHING FINER — Barton U-Type Fire Pumps (as shown above) are regularly equipped with built-in Gear Drive—truck motor operates at approximately ONE-HALF pump speed. With pump wide open and discharging at 250 lbs. pressure, motor loafs along—NO RACING—NO STRAIN! Long motor life assured. U-Type Pumps are built in 350, 400, 500 and 600-gallon sizes.

Also available 400, 500 and 600-gallon F-Type Pumps (Direct Drive) at LOWER PRICES—also small Barton Booster Fire Pumps at still lower prices!

TEN years have passed since the first Barton Fire Pumps went into service—and these first pumps are still making good—for we maintain the highest standards and use the finest materials money can buy.

"How is it then that a Barton Pump saves so much in first cost?"—a fair question, frequently asked. The answer is found in our unique design and in our method of mounting.

For any capacity rating, a Barton Centrifugal Pump is smaller and more compact than older types. You buy no excess weight—no expensive gadgets. Lower cost, naturally!

But that's only half the economy story! Because of Front-Mounting (see above), a special expensive truck is not required. *Any size Barton Pump can be used on a standard truck—completely installed and ready for service without a single chassis change, costing only a few dollars for mechanic's labor.*

UNDERWRITERS' TESTED

Barton Fire Pumps meet and exceed Underwriters' requirements. They handle clean or DIRTY water. They are Automatically Primed. And there's a size for every need. Write for details today!

AMERICAN STEAM PUMP COMPANY
BATTLE CREEK, MICHIGAN
PUMPS AND PUMPS ONLY SINCE 1873

Designed from the Fireman's Viewpoint

FIG. 900—SHUT-OFF NOZZLE

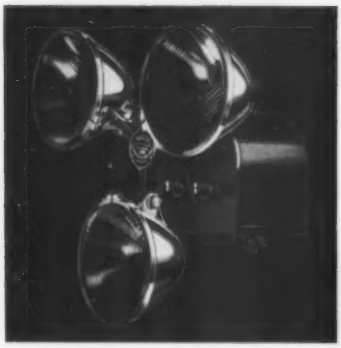


FIG. 931—ROTO-RAYS

■ Buckeye fire fighting equipment is a thoroughly practical line, as it was designed from the fireman's viewpoint rather than the manufacturer's.

There is a complete line of Shut-off Nozzles. They *will not leak*. There is a size and type for *any* fire department.

The Buckeye Exhaust Whistle has a piercing, attention-compelling sound. It is easily heard above the roar of traffic.

Roto-Rays, with its three powerful revolving red lights, clears the way for you through even the heaviest traffic. These lights instantly identify a piece of apparatus or emergency car while still many blocks away. They are distinctly different.

The Buckeye Expander is just what the master mechanic has been waiting for. One Expander takes the segments from ¾" to 3", inclusive. Special sets of segments are available for attaching 2½" coupling to 3" hose.

BUCKEYE IRON & BRASS WORKS
324 East Third Street, Dayton, Ohio

BUCKEYE
Shut-off Nozzles · Roto-Rays · Whistles

FIG. 937—WARNING WHISTLE

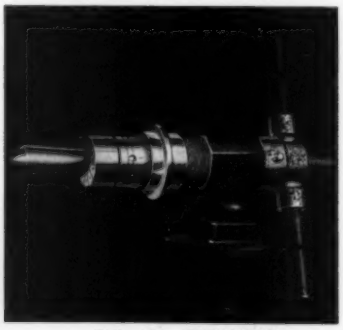


FIG. 926—EXPANDER

WHAT FIREMEN'S COAT

Is Made of Vanitex, the soft, flexible, long wearing, waterproof Material? **Has the Famous Safety Snap** that can be fastened and unfastened with one hand in a jiffy?

Was worn by the Firemen at Chicago's "Century of Progress"?

THE ANSWER IS

MIDWESTERN

Send for our free illustrated catalog showing complete line of our rubber and canvas garments. Satisfaction guaranteed.

Midwestern Manufacturing Co.
Mackinaw, Ill.

CLARK DUPLEX INHALATOR

The Only Automatic Inhalator!

One that tells you how patient is responding. Officially approved by American Gas Association.

PHYSICIANS OXYGEN AND HOSPITAL SUPPLY CO.
1390 EASTERN PARKWAY
BROOKLYN, N. Y.
MANUFACTURERS

STERLING GENERAL ALARM SIREN

The Sterling Vertical Siren gives the Volunteer Fire Department a siren combining every important feature a fire signal should have, namely:

1. Powerful and distinctive tone. 2. 100% weather-proof protection.

3. BALL BEARING MOTOR CAPABLE OF CARRYING 100% OVERLOAD.

4. Rigid, durable and unit construction. 5. Perfectly dynamically balanced rotor of aluminum. 6. Fast pickup—long roll. 7. Outside casing rustproof Armco Iron. 4 cents Red Dues.

Write for descriptive folder.

Sterling Siren Fire Alarm Co., Inc.
ROCHESTER, N. Y.

Ask your dealer about KANT-BLAZE BLANKETS

UNITED PYRO - CHEMICAL CORPORATION
LYNN, MASSACHUSETTS

EASTERN CHIEFS PLANNING FOR RECORD CONVENTION IN WASHINGTON

Unusual Program Arranged Both for Business and Entertainment—Splendid Layout of Exhibits Assured—Attendance Probably the Largest Ever

WASHINGTON is ready to receive the army of Chiefs that will swarm the city on June 3 to 5 to attend the annual convention of the Eastern Assocation of Fire Chiefs.

Headquarters will be at the Mayflower Hotel, in which all the public assembly rooms are air conditioned. There will be a special rate to the Chiefs of $3.50 and up for single rooms, and $5 and up for double rooms. Reservations have already been received from Chiefs in Tennessee, Virginia, Ohio, West Virginia, and North Carolina, all outside of the district of the association, in addition to those from the states included in the district.

Aside from the value of the meeting, this is an opportunity to visit historic Washington, its federal buildings, museums, golf courses, the Potomac River, Washington Monument, Lincoln Memorial, the White House, Congressional Library, and other interesting spots.

The new home of the Department of Interior is the giant of government buildings. It covers 5.5 acres of ground. The new Supreme Court Building was erected at a cost of $10,000,000. It is difficult even to briefly describe all the places worth seeing.

To enable the Chiefs to visit all the interesting spots, the meetings will start and end on time.

Dr. Archer To Speak

Dr. Harry M. Archer, Honorary Medical Head of the New York Fire Department, will give a talk on "First Aid—What Every Fireman Should Know."

George W. Booth, Chief Engineer, and George L. Swan, Engineer, National Board of Fire Underwriters, will be at the convention to help the Chiefs with their fire protection problems. Mr. Swan has made a thorough study of fire alarm systems.

President Ross B. Davis, Philadelphia, will respond to the city's address of welcome. Sherwood Brockwell, State Fire Marshal of North Carolina, is scheduled to give the memorial address.

George Morley, the guiding spirit behind the Convention, Chief Charles E. Clark, Secretary of the Association and Chief William J. Lutz, Wilmington, have been working continuously to make the convention a long-remembered success.

There will be a splendid array of manufacturers' exhibits, in the promenade adjoining the meeting room. Chief William J. Lutz, Wilmington, Del., is Chairman of the Exhibit Committee.

A street adjoining the hotel will be roped off by the Police Department, so that the manufacturers of motor apparatus will be able to display their latest models. The exhibitors will be each given time to address the convention on what they are showing.

Partial List of Exhibitors

Exhibit space has already been taken by:

The American-LaFrance & Foamite Industries
Schwartz Brothers Company
Homelight Company
Ahrens-Fox Fire Engine Company
Russell Company
C. G. Braxmar Company
Gamewell Company
Eureka Fire Hose Company
FIRE ENGINEERING
American District Telegraph Company
D. B. Smith Company
Atlas Manufacturing Fire Equipment Company
Mack International Truck Corp.
American Fire Hose Company
Bi-Lateral Fire Hose Company
Mine Safety Appliance Company

The banquet will be held on Friday evening at 7:30 p.m. in the Grand Ballroom of the hotel. An excellent floor show has been arranged and Sherwood Brockwell has promised a new lot of colored stories.

Inspection trips to the Bureau of Standards, the Department of Agriculture dust explosion testing grounds and to many other points of interest are on the tentative program.

Boston Band Honored

While the Boston Fire Department Band was having its weekly rehearsal on Friday, April 16, at the Quarters of Engines 26 and 35, the members were agreeably surprised when Ben Ellis presented the band with a drum major's baton. Mr. Ellis, who has been interested in the Boston Fire Department for nearly thirty years, made a speech praising the firemen.

New Line of Pumps

A new line of centrifugal pumps, to be mounted "midship" on fire apparatus, has been announced by the American Steam Pump Company, Battle Creek, Mich. These pumps, type UM, are made in both 500 and 600-gallon capacities, with ratings based on pumping from suction in accordance with Underwriters' requirements.

They are single stage pumps. The pump impeller is cast Government Bronze, machined and tested for balance. The pump is controlled by a lever operated sliding gear clutch. The clutch starts and stops the pump easily. The lever is located in front of the driver's seat. A small 75 g.p.m. rotary pump provides automatic priming, and this pump operates independently of the main pump, being driven by a transmission power take-off. This may also be used as a booster pump.

Flood Lighting and Emergency Car for Patchogue, N. Y.

A flood lighting and emergency truck, equipped with Universal Motor Company lighting plant, was delivered to Patchogue, N. Y. In addition to the floodlighting units, the apparatus carries appliances suitable for emergency service.

Maine Fire Chiefs Meet

Ninety members and guests attended the quarterly meeting of the Maine State Association of Fire Chiefs, which was held in the Central Fire Station, Lewiston, on April 13, with luncheon, dinner, and round table discussion at the Hotel DeWitt. Chief Reuben E. Estes, of Lewiston, had charge of the arrangements.

At the morning session in the fire station the visitors were welcomed by Mayor Donat J. Levesqué, Lewiston. The reply, in behalf of the association, was made by Assistant Chief A. G. Blacquiere, Norway.

Chief Allen F. Payson, Camden, presided at the meeting. He was assisted by Chief Joseph W. Randlette, Richmond, Vice-president, and Ex-Chief Charles W. Bowker, Norway, Secretary. The death was reported of Ex-Fire Commissioner Joseph W. Scannell, Lewiston.

The following visitors were introduced to the Maine Chiefs by the presiding officer: Chief Carl D. Stockwell, Burlington, Vt., President of the New England Association of Fire Chiefs; Chief John W. O'Hearn, Watertown, Mass., Secretary-Treasurer; Chief Alfred H. Koltonski, Rutland, Vt., State Vice-President and Director; Chief Michael W. Lawton, Middletown, Conn., State Vice-President and Director; Chief Thomas F. Burns, Bridgeport, Conn., Second Vice-President, and Chief Oliver T. Sanborn, Portland, Me., State Vice-President and Director, all of the New England Association; Chief George Ryder, Secretary, Maritime Association of Fire Chiefs of Canada; Chief William T. Happny, Concord, N. H.; Chief Albert C. Melendy, Nashua, N. H., and Chief Charles H. French, Manchester, N. H., a Director of the New England Association.

Fire Commissioner Louis B. Caron, Lewiston, was introduced and spoke briefly. Edward E. Ramsdell, Reserve Deputy Chief, Lewiston, read a paper on "The History of the Lewiston Fire Department"; Roy H. Owsley, Hallowell, Executive Secretary, Maine Municipal Association, described the plan and scope of the organization, and Chief Oliver T. Sanborn, Portland, told of "Salvage Work" which he said should be a part of the duties of every city Fire Department. He demonstrated how a water chute could be made with ladders and salvage covers.

The speakers at the luncheon were Chief Joseph W. Randlette, Richmond; Chief John W. O'Hearn, Watertown, Mass., and Chief Albert C. Melendy, Nashua, N. H. The last two Chiefs told of plans for the New England Convention and extended a cordial invitation to the Maine Chiefs to attend.

At the morning session a suggestion made by Mr. Owsley, Maine Municipal Association, in regard to establishment of a central purchasing bureau through which supplies including fire hose could be bought at a discount, caused discussion and comment from several associate members, who pointed out that quality hose could not be bought in that manner.

Motion pictures were shown at the afternoon session, the films including fire prevention subjects, fire scenes, and a comedy.

The banquet at the DeWitt Hotel in the evening was followed by a round table discussion. HARRY BELKNAP.

History of Hose

Fire hose has had a rather interesting history, because it has been so closely associated with the development of the American communities.

Modern hose can be said to have started with an idea of Nathan Hunt, a maker of leather belting. As leather was expensive, he thought of using cotton as a substitute. He found a mill in Connecticut to weave such belts but found that the cotton belts had a large percentage of slip. The Boston Belting Company was appealed to, and they coated one side of the belt with rubber. That solved the problem.

The belting attracted attention. He had some on display in the doorway of his store and Col. John C. Boyd, of James Boyd & Sons, makers of harness, leather hose, etc., paused to examine it. The rubber coated belt gave him an idea. He conceived the plan of joining the belt with rivets, rubber side in, to form rubber lined cotton hose. The idea was patented.

For a time the company did a great business and soon leather hose was put out of use. The field attracted J. Van Dusen Reed, New York City, who invented a loom to weave seamless cotton hose. The Eureka Fire Hose Company was formed. This type of hose soon replaced the riveted cotton hose.

Couplings for the old leather hose were riveted on and for a time the same method was applied to cotton hose. Andrew J. Morse and Alexander Boyd developed a plan of securing the hose to the coupling by means of the expansion of an inner ring. This resulted in the "Ne Plus" coupling, a method that is now in general use. The idea was not patented and was soon adopted by other manufacturers.

This interesting bit of hose history was supplied by M. A. Lawton, Treasurer, Andrew J. Morse & Son, an organization which is observing its one hundredth anniversary. The data was obtained from an article by William F. Morse, son of the Andrew J. Morse, who figured so prominently in the early fire hose history.

Charlesworth Now State Fire Marshal

Frank Charlesworth, Chief of Fire Department, Providence, R. I., recently resigned to become State Fire Marshal.

Chief Charlesworth has for years been prominent in Fire Department affairs.

Ex-Chief Frank Charlesworth

He served for ten terms as President of the Fire Chiefs' Club of Rhode Island.

He is succeeded by Deputy Chief John H. Fischer, the oldest man in the department, in point of service. Chief Fischer was appointed to the force on May 18, 1897, and his last promotion was on November 16, 1924, when he was appointed Assistant Chief.

Department and Other Reports Received

Charlotte, N. C.—Tenth annual report of the Fire Department, Charlotte, N. C.; sixty mimeographed pages.

Denver, Col.—Annual report of the Fire Department, Denver, Col.; thirty-six pages, illustrated.

Meeting of State Association of Fire Chiefs of Maine at Lewiston, April 13

LIN-LINED FIRE HOSE is Compact!

LIN-LINED HOSE is also lighter than ordinary fire hose. As a result, you can carry much more hose in your present wagons and handle it faster and easier if you use LIN-LINED, the new and stronger fire hose that has a rotproof linen lining instead of the old-fashioned rubber lining. Try it! Just specify LIN-LINED HOSE when you order.

LIN-LINED
Trademark Reg.

Dealers Wanted

AMERICAN FIRE HOSE CO.
PASSAIC, N. J.

Reduce Water Damage & Insurance Rates

Shuredry SALVAGE COVERS

Write our nearest plant *information and prices.*

Salvage Covers are an essential part of the equipment of progressive fire departments all over the country.

All Shuredry Salvage Covers are made of our special chemically treated canvas. This treatment impregnates the fibre of the cloth and imparts a dry, flexible finish resulting in a fabric that is always pliable, soft, easy to spread. Shuredry Salvage covers are not affected by changing atmospheric conditions and are always ready for immediate use. This is a mildew resistant treatment that also acts as a preservative. It adds very little to the weight of the cloth. Shuredry covers will not crack on the folds when you put them on your storage shelf.

Three-fourths of all fire losses are directly chargeable to water damage. Reduce this hazard. Specify Shuredry Salvage Covers to your purchasing agent. Drill your men in their use.

Fulton Bag & Cotton Mills
Manufacturers Since 1870
ATLANTA ST. LOUIS DALLAS
MINNEAPOLIS BROOKLYN NEW ORLEANS KANSAS CITY, KAN.

CRAMMED FULL OF INFORMATION

This 20 page booklet brings you UP TO DATE on COMPLETE FIRE-ALARM EQUIPMENT

Officials responsible for protection of life and property cannot afford to be uninformed of recent vital developments in Fire Department equipment...That's why you'll want to have the complete Horni booklet on Fire Department Communication Systems! It's free! And it is sponsored by two names long-famous for *dependable*, well-designed equipment—Horni, the manufacturer, and Graybar, the distributor . . . Mail the coupon *today*. *Note:*—We offer immediate delivery from our warehouse on electrical maintenance and line material items. Call us for quick service.

HEWITT-GUTTA PERCHA
FIRE HOSE
A complete line, including
Wax Treated - Solid Multiple Woven
AND
Single and Double Jacket Hose
Manufactured by
HEWITT RUBBER CORPORATION
BUFFALO, N. Y.
"Territories Available"

FIRE HOSE
TWO LATEST IMPROVEMENTS!
High Pressure Light Weight Hose
Drop Forged Rocker Lug Couplings
Write for Complete Information
BI-LATERAL
FIRE HOSE CO.
20 N. WACKER DRIVE
Chicago, Ill.
15 PARK ROW
New York, N. Y.

GOODALL
"SUPER X"
FIRE HOSE
There is a brand of GOODALL FIRE HOSE for every situation . . . from smallest town to largest city . . . each representing the highest obtainable quality in hose of its type. The long, dependable service which GOODALL hose provides is proof of its real value and economy. Write for folder.
GOODALL RUBBER CO.
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NEW YORK • PITTSBURGH • CHICAGO
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CRACKERJACK
FIRE HOSE

The hose with an unsurpassed reputation for QUALITY and SERVICE that has made it the STANDARD OF THE WEST for over 25 years.
COMPLETE INFORMATION UPON REQUEST
THE AMERICAN RUBBER MANUFACTURING CO.
OAKLAND, CALIFORNIA
Dealers in All Parts of the Country

Every Fire Dept. Officer Should Have
These Three Books—*Packed Full of Practical Information*

Questions and Answers for Battalion and Deputy Chiefs

A 210 page book, fully illustrated, by Geo. J. Kuss, former Deputy Chief, New York Fire Department, and Fred. Shepperd, Managing Editor of FIRE ENGINEERING.

A valuable book, not only for candidates for examinations for Battalion and Deputy Chief, but for every member of the department. The only book published which gives detailed methods of operating at large fires and the reasons for each move.

The following are a few of the important topics covered:

Detailed description of the proper procedure in fighting fires: 1. Size-up; 2. Calling of help; 3. Saving of life; 4. Covering exposures; 5. Extinguishing fire; 6. Overhauling. How to test motor fire apparatus. How the following types of fires should be fought: Large department stores, large hotels and rooming houses, large area residential fires, combination stores and apartments, motion picture film exchanges, tall office buildings, wholesale grocery stores and warehouses, group building fires, theatres, schools, factories, etc., and considerable other data.

Price—$2.15, postpaid.

Questions and Answers for Lieutenant and Captain

A 290 page book, fully illustrated, by Geo. J. Kuss, former Deputy Chief, New York Fire Department, and Fred. Shepperd, Managing Editor of FIRE ENGINEERING.

Contains questions asked at promotional examinations in practically every city in the country where civil service examinations are held, with answers.

Includes chapters on Report Writing, How to Answer Examination Questions, Chemistry Examination Questions, Fire Fighting Questions, Overhauling, Ventilation, Fire Prevention, Inspection, Evolutions, Drills, Use of Apparatus, Rescue Work, and in fact all the topics covered by the fire department promotional examinations.

If you are studying for a promotional examination, you need this book, and if you are not studying for examination, this book will nevertheless give you a vast amount of valuable information on up-to-date fire methods.

Price—$2.65, postpaid.

Simplified Fire Department Hydraulics

A 200 page book, fully illustrated, by Fred. Shepperd, Managing Editor of FIRE ENGINEERING.

A complete course of instruction in fire department hydraulics. Designed to prepare fire department officers for hydraulic questions in examinations, such as required of all ranks.

Contains over 150 problems in fire department hydraulics asked in examinations in New York, Chicago, Milwaukee, Seattle, Newark, and a score of other large cities.

Treats fully all departments of fire department hydraulics, including pressure calculations, friction loss, engine and nozzle pressures, range of streams, capacities of engines, discharge from nozzles, hydrants, sprinklers, etc., etc.

Price—$2.15, postpaid.

Use This Convenient Coupon to Order Your Copies Today.

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.....copies of Questions and Answers for Battalion and Deputy Chiefs ☐
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.....copies of Simplified Fire Department Hydraulics ☐

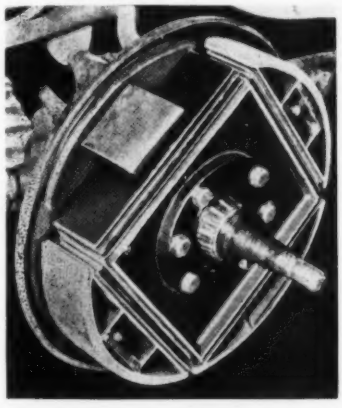
Name..... Rank.....
Address..... Date.....

Manufacturers' Announcements

Brakes for Fire Apparatus

Recent surveys of fire fighting equipment in use throughout the country indicate that a large proportion are obsolete, due to inadequate brake equipment.

A new type brake is on the market which is being used successfully in several cities on both new and old pieces of apparatus. The manufacturers, Linderman Devices, Inc., describe the brake as a simple square cage with a floating shoe on each side of the square. Between each of the four shoes and the cage is a welded all-steel diaphragm, running the full length and width of the shoe. The diaphragms are interconnected by a simple manifold pipe, which guarantees permanent built-in equalization at all times. These brakes may be operated by straight air pressure, or by hydraulic pressure from a master cylinder in the chassis. When straight air pressure is used, connection with the brake is directly to the foot valve, or storage tank, and all intermediate parts



Details of Brake

such as air chambers, slack adjusters and camshafts are eliminated.

Miami, Florida, has had very successful experience with this brake.

Pictured in the April issue was a new piece of apparatus recently commissioned by the Toronto Fire Department. The Ford tractor and ladder trailer were equipped with Linderman brakes before being placed in service and from current reports are doing an excellent job. Operation on this unit is by straight air pressure. An outstanding feature of the brakes is that the entire drum area is effectively used for lining, thus greatly reducing the gross load per square inch of brake lining.

Linderman Devices understand thoroughly the problems of the fire apparatus operators, as on their engineering staff they have two men with a great deal of experience in this field. One of these men was for seven years in charge of fire apparatus designs for one of the country's leading manufacturers.

Electrical Resuscitator

Synder & Leggerie, Mt. Vernon, N. Y., have developed a portable resuscitator for electric shock. The device has a small electric motor, a cam and spring mechanism, and a pair of pressure pads. The pads are moved downward and forward, and upward and backward, to follow the Schafer prone-pressure method. The operator's hands are thus left free.

Timing Devices

An illustrated folder has been published by Struthers Dunn, Inc., 139 N. Juniper Street, Philadelphia, Pa., to show their line of relays, timing devices, and thermostats.

New Emergency Car at Mt. Vernon

(*Continued from page 242*)

accessible positions on running-boards and top of the apparatus body:

1 Acetylene cutting outfit, complete; 1 electric saw; 1 life gun, in case; 4 Burrell All-Service gas masks; 1 M.S.A. hose mask, in case; 2 McCaa gas masks; 2 McCaa canisters; 4 extra cylinders, McCaa masks; 2 H & H inhalators; 2 extra cylinders, inhalators; 1 M.S.A. first-aid kit; 1 finger ring cutter; 1 folding cot; 4 asbestos blankets; 1 wire and bolt cutter; 2 red flags; 11 cans Carboride; 6 blankets; 2 wading suits; 4 electric heating pads; 1 Voleske bar cutter; 1 gas shut-off wrench; 1 high voltage tong, 1 pair rubber gloves; 2 Frigidaire keys; 2 10-ton hydraulic jacks; 2 extension lifts for hydraulic jacks; 2 screw jacks; 250 feet ½-inch rope; 1 24-ft. extension ladder; 1 12-ft. folding ladder; 1 10-ft. pike pole; 1 crow bar; 1 Detroit door opener; 1 stretcher; 1 New York type claw tool; 1 12-ft. roof ladder with folding hooks; 1 2½-gallon S. & A. Extinguisher; 2 CO_2 extinguishers; 1 CO_2 transfer pump (charging unit); 2 Phomaire play pipes; 1 2½-gallon foam extinguisher; 4 1-quart C.T.C. extinguishers; 4 electric lanterns; 1 2" auger; 1 8" flat file; 1 pick head axe; 1 short handle flat shovel; 1 short handle pitch fork; 1 No. 10 sledge hammer; 1 6" offset screw driver; 1 alligator wrench.

Warning signals consist of locomotive bell, Federal Coaster electric siren and Buckeye whistle. A ten-inch revolving searchlight is part of the apparatus light equipment.

This car will take care of all kinds of emergency work in Mt. Vernon as the Police Department has no emergency equipment, and all emergency calls are given to the Fire Department.

Emergency Fireboat Without Propeller

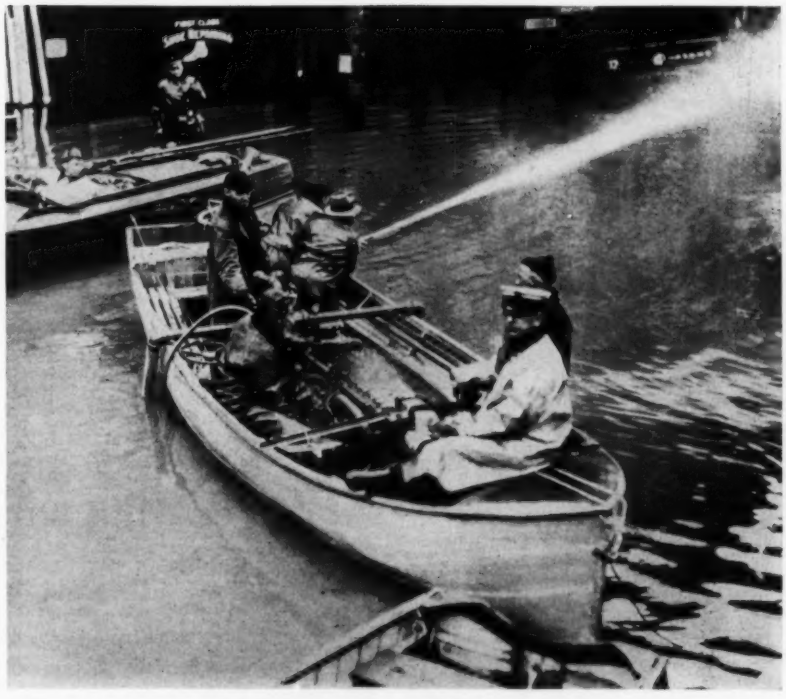
The floods that inundated Cincinnati occurred last year, but two years previous to that, plans were being made for a boat that proved its worth in duty during the flood. The boat was constructed in forty-eight hours after the emergency developed.

The boat is minus a propeller. The drive is obtained by nozzles below the water line which discharges water under high pressure. The nozzles are part of a movable unit, located at the stern, which serve as a rudder and also as the propelling agent. The nozzles are rotated by means of the conventional steering wheel.

For flood service, high speed cannot be used, and the propeller soon becomes enmeshed with debris.

The boat is able to take complete or partial draft from the hull itself, with the fire pump acting as a bilge pump. This makes it possible to reach safety, should the boat be damaged. A large turret nozzle, made for this boat by the Akron Brass Company, is placed on the stern deck.

The boat was constructed by the Hanley Engineering Service, Prospect, Ohio. The driving and pumping unit is a Deluge single stage centrifugal pump of special design for fireboat work. It has a capacity of 800 g.p.m. The floods proved the value of a boat of this type.



Fireboat Used During Floods at Cincinnati

CONVENTION DATES

May 10-11—SOUTHEASTERN ASSOCIATION OF FIRE CHIEFS. 10th Annual Convention, Albany, Ga. Secretary, Chief R. S. Baughan, Norfolk, Va.

May 10-14—NATIONAL FIRE PROTECTION ASSOCIATION. 41st Annual Meeting, Congress Hotel, Chicago, Ill. Managing Director, Franklin H. Wentworth, 60 Batterymarch Street, Boston, Mass.

May 17-18—OKLAHOMA STATE FIREMEN'S ASSOCIATION. 43rd Annual Convention, Skirvin Hotel, Oklahoma City, Okla. Secretary-Treasurer, Charles Slemp, 1701 Northeast 63rd St., Oklahoma City, Okla.

May 19—FIRE CHIEFS' EMERGENCY PLAN. Annual Dinner and Meeting, Schmidt's Farm, near Scarsdale, N. Y. Secretary, Captain Walter M. Dawkins, Box 341, Port Chester, N. Y.

May 24-26—NEW MEXICO STATE FIREMEN'S ASSOCIATION. 15th Annual Convention, and Fire School, Clayton, N. M. Secretary-Treasurer, Theodore A. Rosenwald, Albuquerque, N. M.

May 25-28—IOWA FIRE SCHOOL. 13th Annual School, Iowa State College, Ames, Ia. Address, Lindon J. Murphy, Engineering Extension Service, State College.

May 26—FIRE CHIEFS' EMERGENCY PLAN OF FAIRFIELD COUNTY. Annual Dinner and Meeting, Hotel Stratfield, Bridgeport, Conn. Secretary, Lieut. John Moehring, Toms Road, Stamford, Conn.

May 31-June 5—SOUTH DAKOTA FIREMEN'S ASSOCIATION. 53rd Annual Convention and 8th Annual Fire School, Pierre, S. D. Address, Chief R. A. Powell, Pierre, S. D.

June—NEW HAMPSHIRE STATE FIREMEN'S ASSOCIATION. Annual Convention, date to be announced later. Secretary, Oscar P. Stone, Manchester, N. H.

June 3-5—EASTERN ASSOCIATION OF FIRE CHIEFS. 10th Annual Convention, Mayflower Hotel, Washington, D. C. Secretary, Chief Charles E. Clark, Wayne, Pa.

June 8-10—OHIO FIRE CHIEFS' ASSOCIATION. 30th Annual Convention, Chillicothe, Ohio. Secretary-Treasurer, Chief Phillip J. Harty, Fire Department, Youngstown Sheet and Tube Company, Youngstown, Ohio.

June 8-10—TEXAS FIREMEN AND FIRE MARSHAL'S ASSOCIATION. 61st Annual Convention, Port Arthur, Tex. Secretary-Treasurer, Olin Culberson, Edna, Tex.

June 15-16—MINNESOTA STATE FIRE DEPARTMENT ASSOCIATION. 65th Annual Convention, Armory, Crookston, Minn. Secretary, Fred Pfaender, New Ulm, Minn.

June 15-16—NORTH DAKOTA STATE FIREMEN'S ASSOCIATION. 53rd Annual Convention, Walhalla, N. D. Secretary, Heinie Hamptman, Bismarck, N. D.

June 15-18—ILLINOIS ANNUAL FIRE COLLEGE. 13th Annual College, University of Illinois, Urbana. Director, Prof. L. H. Provine, of the University; Secretary, Asst. Chief Roy W. Alsip, Champaign, Ill.

June 16—NORTHWESTERN OHIO VOLUNTEER FIREMEN'S ASSOCIATION. 64th Annual Convention, Defiance, Ohio. Secretary, J. W. Gardner, Ashland, Ohio.

June 16-19—WASHINGTON STATE FIRE CHIEFS' ASSOCIATION AND WASHINGTON STATE FIREMEN'S ASSOCIATION 5th Annual Convention, Chiefs, and 15th Annual Convention, Firemen's Association, and Annual State Fire College, Everett, Wash. Secretary, Chiefs, W. A. Groce, Spokane, Wash.; Firemen, Lyle J. Ficklin, Kalama, Wash.

June 17—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. Election of Officers only (convention cancelled), Columbia, S. C. Secretary-Treasurer, Chief John H. Wohlers, Charleston, S. C.

June 21-25—MARYLAND STATE FIREMEN'S ASSOCIATION. Secretary, George R. Lindsay, Hagerstown, Md.

June 22-24—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 15th Annual Convention, The Balsams, Dixville Notch, N. H. Secretary-Treasurer, Chief John W. O'Hearn, Watertown, Mass. Chairman, Exhibit Committee, Chief Albert C. Melendy, Nashua, N. H.

June 23-25—MARYLAND STATE FIREMEN'S ASSOCIATION. 45th Annual Convention, Easton, Md. Secretary, George R. Lindsay, Hagerstown, Md. Chairman, Exhibit Committee, J. M. Van Buren, Easton, Md.

June 24-26—GREAT LAKES FIRE CHIEFS' ASSOCIATION. Annual Convention, Green Bay, Wis. Secretary, Chief R. R. Motesheard, Dearborn, Mich.

June 24-26—OREGON FIRE CHIEFS' ASSOCIATION. Annual Fire School and Conference, Medford, Ore. Secretary, Thomas Coates, Tillamook, Ore.

June 28-30—NEW YORK STATE CONFERENCE OF MAYORS AND OTHER MUNICIPAL OFFICIALS. Annual Meeting, Saratoga, N. Y. Executive Secretary, William P. Capes, City Hall, Albany, N. Y.

June 28-30—ASSOCIATED MUNICIPAL SIGNAL SERVICES. 3rd Annual Convention, Elizabeth-Cartaret Hotel, Elizabeth, N. J. Acting Secretary, William F. Franklin, 420 Lexington Ave., New York City.

July—NEW JERSEY AND NEW YORK VOLUNTEER FIREMEN'S ASSOCIATION. Annual Convention, Montvale, Park Ridge and Pearl River. Secretary, Charles T. Mortimer, Sunset Ave., Haworth, N. J.

July 3—MERCER COUNTY FIREMEN'S ASSOCIATION. Field Day and Gala Fireworks Spectacle.

July 6-8—KENTUCKY FIREMEN'S ASSOCIATION. 18th Annual Convention, Corbin, Ky. Secretary, Captain V. A. Bean, 2215 W. Broadway, Louisville, Ky.

July 6-9—PROVINCE OF QUEBEC POLICE AND FIRE CHIEFS ASSOCIATION. 5th Annual Convention, Rivière du Loup, Que. Secretary-Treasurer, Robert Harrington, Chief, Fire Department, McColl-Frontenac Oil Co., Ltd., Suite 8, Windsor Hotel, Montreal, Que.

July 7-10—COLORADO STATE FIREMEN'S ASSOCIATION. 21st Annual Convention, Fire College and Tournament. Glenwood Springs, Col. Secretary, Clinton Turnbull, 215 Boston Bldg., Denver, Col.

July 12-15—FLORIDA FIRE COLLEGE. 8th Annual College, Daytona Beach, Fla. Secretary, Chief F. C. Pfaender, Winter Haven, Fla.

July 12-15—MICHIGAN STATE FIREMEN'S ASSOCIATION. 63rd Annual Convention and 9th Annual Fire College, Luddington, Mich. Secretary, Charles V. Lane, Charlotte, Mich.

July 13—STATE ASSOCIATION OF FIRE CHIEFS OF MAINE. Quarterly Meeting, York, Me. Secretary-Treasurer, Ex-Chief C. W. Bowker, South Paris, Me.

July 13-14—MARITIME FIRE CHIEFS' ASSOCIATION. 23rd Annual Convention, Charlottetown, Prince Edward Island. Secretary-Treasurer, George P. Ryder, St. Stephen, N. B.

July 28-29—WEST VIRGINIA STATE FIRE CHIEFS' ASSOCIATION. 6th Annual Convention, Morgantown, W. Va., Secretary-Treasurer, Ray Lister, Salem, W. Va.

August—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 54th Annual Convention, Derby, Conn. (Exact date to be decided later.) Secretary, D. W. Harford, South Norwalk, Conn.

Aug. 3-5—WISCONSIN PAID FIREMEN'S ASSOCIATION. 30th Annual Convention, Wisconsin Rapids, Wis. Secretary-Treasurer, Willian H. Schultz, Sheboygan, Wis.

Aug. 5-7—MONTANA STATE FIREMEN'S ASSOCIATION. 46th Annual Convention, Anaconda, Mont. Secretary, Robert J. Thorburn, Billings, Mont.

Aug. 9-10—IDAHO STATE FIREMEN'S ASSOCIATION. 23rd Annual Convention, Lewiston, Ida. Secretary-Treasurer, George Westcott, Kellogg, Ida.

Aug. 9-12—NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. 50th Annual Convention, Greensboro, N. C. Secretary, John Miller, Concord, N. C.

Aug. 10-12—MICHIGAN STATE FIRE CHIEFS' ASSOCIATION. Annual Convention, Bancroft House, Saginaw, Mich. Secretary, and Chairman, Exhibit Committee, George F. Danbury, Grosse Pointe Farms, Mich.

Aug. 10-12—VIRGINIA STATE FIREMEN'S ASSOCIATION. 51st Annual Convention, Charlottesville, Va. Secretary, O. W. Dabney, Staunton, Va.

Aug. 10-13—VIRGINIA STATE FIRE CHIEFS' ASSOCIATION. 9th Annual Convention, Charlottesville, Va., with State Firemen's Association. Secretary-Treasurer, E. H. Rouse, Orange, Va.

Aug. 11-14—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 44th Annual Convention, Spokane, Wash. Secretary, Jay W. Stevens, State Fire Marshal of California, Merchants Bldg., San Francisco, Cal.

Aug. 15-18—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. 19th Annual Convention, Amsterdam, N. Y. Secretary-Treasurer, Frank A. Emden, 1403 Mather Ave., Utica, N. Y.

Aug. 24-26—DOMINION ASSOCIATION OF FIRE CHIEFS. 29th Annual Convention. Oshawa, Ont., Can. Secretary-Treasurer, Chief James Armstrong, Box 56, Kingston, Ont.

Aug. 30-Sept. 2—NATIONAL MUNICIPAL SIGNAL ASSOCIATION. 42nd Annual Convention, Hotel Statler, Cleveland, Ohio. Secretary-Treasurer, Irvin Shulsinger, 7 East 42nd St., New York City.

Sept. 7-9—MARYLAND FIRE COLLEGE. 8th Annual Fire College, University of Maryland, College Park, Mr. Director, Prof. S. S. Steinberg, Dean, Engineering College; Assistant Director, T. W. Venemann, Maryland State Firemen's Association; Secretary, G. F. Pollock, President's Office, University of Maryland.

Sept. 8-9—DELAWARE VOLUNTEER FIREMEN'S ASSOCIATION. 17th Annual Convention, Dover, Del. Secretary, S. H. Carson, Dover; Chairman, Convention Committee, W. W. Pettyjohn, Dover.

Sept. 14-15—IOWA FIREMEN'S ASSOCIATION. 60th Annual Convention, Atlantic, Ia. Secretary, Paul A. Soener, Independence, Ia.

Sept. 17-18—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 60th Annual Convention, Atlantic City, N. J. Secretary, Evan F. Benners, 602 Chamber of Commerce Bldg., Newark, N. J.

Sept. 27—TEMISKAMING FIREMEN'S ASSOCIATION. 22nd Annual Convention, Amos, Que. Secretary-Treasurer, F. E. Thompson, Box 686, New Liskaard, Ont.

October—ARKANSAS STATE FIREMEN'S ASSOCIATION. 16th Annual Convention, Little Rock, Ark. (Exact date to be announced later.) Secretary-Treasurer, H. D. Compton, Little Rock, Ark.

Oct. 5-7—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 58th Annual Convention, Philadelphia, Pa. Secretary, Chief Charles E. Clark, Box 217, Wayne, Pa.

Oct. 6-7—ALABAMA STATE FIREMEN'S ASSOCIATION. Second Annual Convention, Montgomery, Ala. (State Fire College to be held just prior to convention.) Secretary-Treasurer, George E. Crossett, Chief Dispatcher, 1916 Sixth Ave., Birmingham, Ala.

Oct. 12-14—ILLINOIS FIREMEN'S ASSOCIATION. 50th (Golden Anniversary) Convention, Danville, Ill. Secretary, Assistant Chief Roy W. Alsip, Champaign, Ill.

Oct. 19-21—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual Convention, North Platte, Neb. Secretary-Treasurer, Louis A. Novak, Box 788, Norfolk, Neb.

Oct. 19-22—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 65th Annual Conference. Headquarters, Biltmore Hotel, and Exhibits and Sessions, New Municipal Auditorium, Oklahoma City, Okla. Secretary-Treasurer, Ex-Chief James J. Mulcahey, 16 Franklin Ave., Yonkers, N. Y.; Chairman, Exhibits, Chief Ray Tiller, Waterloo, Ia.

Cumberland Firemen To Meet

The annual convention of the Cumberland County Volunteer Firemen's Association will be held in Duncannon, Pa., September 9-11.

New Jersey Firemen to Hold Field Day

A field day and gala night fireworks spectacle is to be held at the New Jersey State Fair Grounds, Trenton, N. J. Saturday, July 3. This event is under the auspices of the Mercer County Firemen's Association and the State Fair, and has the active support of the New Jersey State Firemen's Association. It is anticipated that at least five thousand firemen from all parts of New Jersey and surrounding states will be present. A souvenir program will be published in connection with the Field Day.

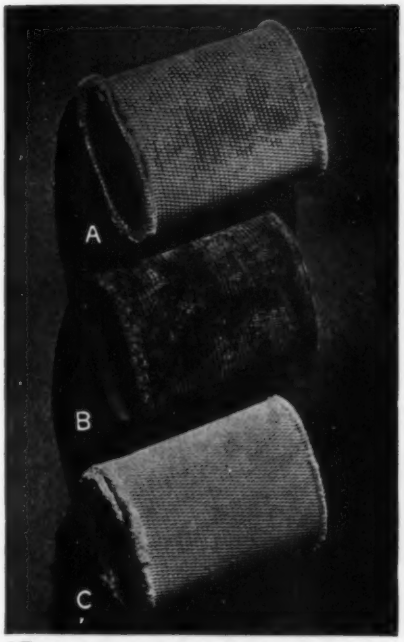
Chief Volk Reelected

Chief Albert Volk, Marshall, Minn., was elected head of the department for the forty-second consecutive year. He is also starting his forty-eighth year service with the department.

Chief Davis Out of Hospital

Friends of Chief Ross B. Davis, Philadelphia, and who is President of the Eastern Association of Fire Chiefs, will be pleased to learn that he is out again, recuperating from a broken ankle received at an explosion while fighting a fire. He has to move about on crutches.

He was able to attend the North Carolina Firemen's Training School meeting at Durham, N. C., and to address the 280 men gathered from all over the state.



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Unretouched photo showing results after samples were saturated with water and exposed to moist atmosphere for six months.

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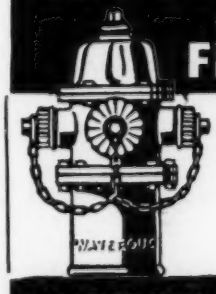

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Highly Endorsed by Fire Chiefs Everywhere!

Chief Henry of Lexington, Ky., writes:
"The 'Fire Chief's Handbook' is the work of one of vast experience. Every fireman should have a copy for study and reference."

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"It is very instructive and helpful. We find this book very convenient to refer to in our school work."

THE FIRE CHIEF'S HANDBOOK

By FRED SHEPPERD

In Collaboration with the EDUCATIONAL COMMITTEE *of the* INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

THERE have been books on fire-fighting, but never anything so complete and authoritative as the "Fire Chief's Handbook." This book, a gold-mine of practical, helpful data, gives a reliable, up-to-the-minute answer to almost every question that might come up in modern fire-fighting practice.

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Dr. Archer Addresses Fairfield Chiefs

The feature of the regular meeting of the Fairfield County Fire Chiefs' Emergency Plan was an address by Dr. Harry Archer, Honorary Deputy Chief and Surgeon, New York Fire Department. The meeting was held at the Masonic Temple, Greenwich, Conn., on the evening of Wednesday, April 28, and there was the second largest attendance of any meeting held by the Plan.

The members were welcomed by First Selectman Eugene Laughlin; Selectman and ex-Chief James N. Sullivan and Chief Hubbard, of Greenwich, the latter expressing himself as being honored by having one of the largest meetings held in his city. Chief Veit, Stamford, reported that the New Haven County Chiefs' Emergency Plan had been formed and had held their organization meeting, with a membership of 26, which he considered a very good start. Chief Bernard Scully announced that the annual dinner and meeting would be held at the Hotel Stratfield, Bridgeport, Conn., on Wednesday, May 26, at 8 p. m. Chief McNamara, Danbury, reported for the Nominating Committee, the following ticket to be voted upon at the annual meeting:

For President—Ex-Assistant Chief Bernard Scully, Westport.
For First Vice-President—Chief Thomas Boyle, Noroton.
For Second Vice-President—Thomas Carroll, Fairfield.
For Third Vice-President — Ex-Chief Peter Beckerle, Danbury.
For Secretary (Renominated)—Lieut. John Moehring, Stamford.
For Treasurer (Renominated)—Chief George Brencher, Darien.
Board of Directors (Two Years)—Chief Sydney Stapely, Nichols; Fire Commissioner Fred Von Holtz, Southport; Assistant Chief Stuart Potter, Old Greenwich, and Chief Milton Durant, Bethel.
Board of Directors (One Year)—Chief F. R. Gisborne, Old Greenwich; Chief Harry Askew, Turn of River; Chief John McNamara, Danbury, and Chief Victor Veit, Stamford.

Ex-Chief Beckerle spoke on a proposed law to protect drivers of fire apparatus from liability for accidents. This bill, he said, was based on a New York State law, which had been passed through the efforts of the Westchester "Plan." He called upon Attorney Stubbs, who announced that the bill was in the hands of the Judiciary Committee of the legislature and there was every prospect that it would pass without amendment. President Woolley, of the Westchester "Plan," and President Moorehouse, of the Mid-Hudson-Harlem Valley Fire Chiefs' Association, spoke briefly.

Dr. Archer, in his address, said that yesterday fire fighting was a job; today, it is a profession, and this applies equally to paid and volunteer departments. One of the most important parts of this profession are the various branches of first-aid. In referring to wounds, he said that there was only one antiseptic to use, and that is tincture of iodine. This should be made up with alcohol, not water, and placed in a rubber stoppered bottle. Insignificant wounds were the ones that spelled danger, as they were apt to be neglected. Punctured wounds should be treated with an injection of tetanus serum, to avoid danger of lockjaw. Dr. Archer illustrated the method of using a tourniquet to stop a hemorrage. He referred to the danger of "jack-knifing" a patient with a possible fracture or dislocation of the spine. Such a case should be kept flat. Other sections of his address were devoted to burns and their treatment; frostbite and heatstroke; resuscitation and the use of the inhalator and the antidotes for various poisons, both inhaled and taken internally. He showed a reel, illustrating the methods of resuscitation and the treatment for drowning. At the conclusion of his address and the discussion on it, Dr. Archer was given a rising vote of thanks and was elected an Honorary Member of the Plan.

An interesting demonstration was given by Jules Steffen, of the Mine Safety Appliance Company. A live guinea pig was placed in a glass jar containing illuminating gas until unconscious, and then was restored by the use of an H & H inhalator. Mr. Steffen also showed an electric cap lamp, various types of helmets, a self-rescuer for use in dense atmospheres, Wolf safety lamp and a new artificial respiration recorder, which records on a chart the respirations of the patient.

It was announced that the meeting following the annual dinner would be held at Georgetown, probably on June 16. Refreshments were served by courtesy of the Greenwich department.

Harris Chief of Akron

C. E. Harris, Assistant Chief of the Akron, Ohio, Fire Department, was advanced to head of the department to succeed W. F. Woehler, who retired on December 1, 1936.

Chief Harris has served in the department for about thirty-four years. He was appointed Lieutenant in September, 1912; Captain, January, 1920, and Assistant Chief, December, 1930. He is the city's third Chief under the Civil Service System.

Zone School for Kent, Ohio

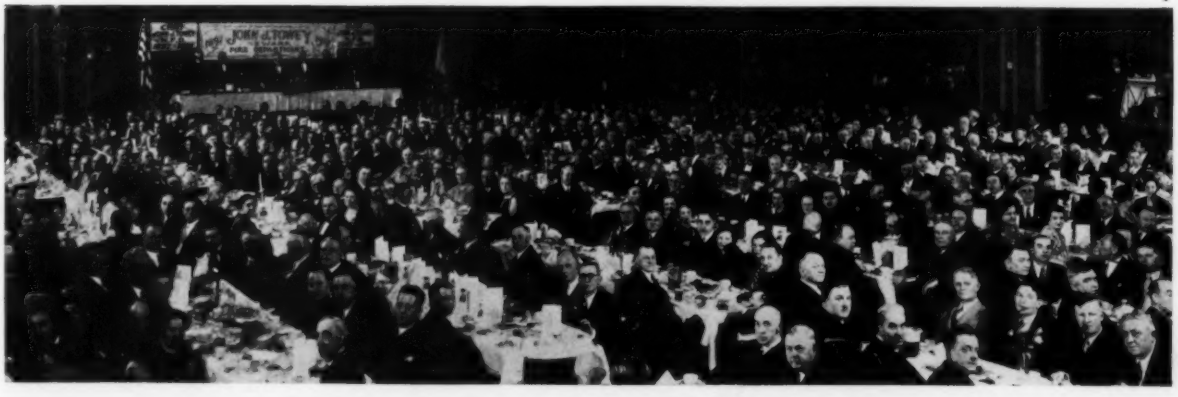
The fourth Ohio Regional Fire School and the second Ohio Fire Exposition, is to be held at Lake Brady Park, Kent, Ohio, June 22 and 23. Attendance is expected from Ohio, Pennsylvania and West Virginia.

The Fireboat "Hanley" will be on exhibit, and there will be a display of fire apparatus and equipment. The exhibits are in charge of Capt. L. P. Seiler, Cuyahoga Falls, Ohio.

The meeting is being sponsored by the Ohio Fire Chiefs Association, Ohio State University, Ohio Inspection Bureau, Ohio League of Municipalities, and a number of firemen's associations within the state.

Tarrytown, N. Y., Has Low Fire Loss

Chief James J. Taxter, of the village of Tarrytown, N. Y., attributes the remarkably low fire loss for the fiscal year ending April 9, 1937, to the extensive work of the Fire Prevention Committee of his Fire Department. This loss amounted to only $249, a per capita loss of less than four cents. The number of alarms were cut nearly in half for the year. The committee functions all of the year, with special efforts during the Spring, Fire Prevention Week and at Christmas. Fireworks were prohibited in the village last year by special ordinance. The department, which consists of five engine and one truck companies, has conducted a fire school for the past seven years, and this, the Chief believes, has been a contributing factor in the low fire loss. The village is covered by over 90 alarm boxes.



Testimonial Dinner Dance to Former Chief John J. Towey, Newark, N. J.

John J. Towey, who served as Chief of the Newark, N. J., Fire Department for twenty-two years, and retired on March 27, was tendered a testimonial dinner dance by his associates and friends on April 8 at the Mosque Ball Rooms, Newark. The view shown above gives an idea of the large attendance at the banquet.

RECOMMENDED SPECIFICATIONS FOR SHORT AND MEDIUM LENGTH LADDERS

Good Practice Requirements Suggested by the Ohio Inspection Bureau, and the West Virginia Inspection Bureau

LADDERS for Fire Department use necessarily must be of better material and workmanship than those for ordinary purposes. They should be especially built for Fire Department service and no attempt made to merely adapt commercial ladders to this use. In addition to the standards set forth in the code of the American Standards Association, the following specifications are recommended by the Ohio Inspection Bureau and the West Virginia Inspection Bureau:

These specifications in general should be considered as pertaining to ladders less than 35 feet in length; those that do not have poles or other special construction; or those that usually can be raised by two men or less. The three general types of ladders commonly used and considered here are: (1) Roof, hook, or scaling ladders; (2) Wall, single or straight ladders; (3) Extension ladders.

BEAMS OR RAILS: These shall be of straight-grained wood, free from objectionable defects. This wood shall be carefully selected and thoroughly seasoned. Douglas fir, also known as Oregon red cedar, should preferably be used. Pieces should be smooth, free from splinters and with corners slightly rounded.

RUNGS: These shall be of straight-grained second growth hickory or ash, firmly secured to the beams or rails.

CROSS OR BRACE RODS: These shall be of steel, bolted. There shall be one near each end rung, and spacing shall not exceed 5 feet.

HARDWARE: All hardware shall be of rust-resisting metal, or thoroughly plated or painted. All bolt heads and nuts shall be of a type that will protrude as little as possible, so as to avoid catching on window ledges, cornices, eaves, etc.

HEEL IRONS OR SPURS: All ladders shall have heel irons with double nibs extending at least ¾-inch. On wall, single or straight ladders heel irons shall be placed on all four beam ends.

HOOKS: Collapsible hooks of roof or scaling ladders shall be of ample strength and sturdy construction. They should be of the long-sweep type, so as to make them useful over window sills and parapets. In general, hooks should curve from the inside of one rail to near the inside of other. In all cases the hooks shall be so placed that the beam ends will protrude as far as the rounded part of the hooks, thus making the ladder equally useful as a wall ladder. Also in all cases the hooks shall be firmly and adequately fastened to the ends of the rails. The latter should preferably be banded.

LOCKS, DOGS, LATCHES OR PAWLS: These shall be of sturdy construction and positive in their action. The nibs or hooks shall be plated or painted traffic yellow, white, or some color to aid visibility in smoke or darkness.

PULLEYS: These shall be of plated steel, bronze or equivalent metal, self-lubricating, of good diameter and with ample rope groove.

ROPES OR HALYARDS: All ropes shall be of a good grade manilla, preferably treated, not less than ⅝-inch. A harness snap should not be placed on the hoisting rope, although this or some equally quick fastening device is desirable on the lower end of rope.

EXTENSION LADDERS carried on pumpers or hose trucks shall be not less than 24 feet. The length shall be considered as the practical working length when allowing for a safe overlap. A stop or catch should be provided to insure against overrunning the safe overlap. All movable parts shall operate freely, without binding or undue play.

PAINTING: The beams and rungs shall not be painted, except near the ends of the ladder. A good grade of filler and of clear spar varnish may be used on the beams and rungs. The top 18-inch of all beams and the top rung shall be painted some distinctive color to aid visibility in smoke and darkness. Traffic orange-yellow, pure white, or alternate diagonal black and white stripes can be used. Cadmium-plated hardware may be used in place of the foregoing. The bottom of ladders should be painted black, except that the bottom rung may have alternate stripes if desired. On so-called double-end ladders the "top" is determined by position of brace rods. The working length shall be plainly painted on at least two places on each ladder, with contrasting numerals at least 1½-inch high.

MOUNTING BRACKETS AND NESTING: These shall be of a type that will hold the ladders rigid while in transit and not allow chafing. They should preferably be leather-lined. (Brass plates used at contact points, have a tendency to work loose and injure men's hands.) Where a roof ladder and an extension are nested and carried together on the side of a truck, the mounting should be such that the outside ladder can be taken off separately and easily. In other words, it should not require two men to unload the three sections since either ladder usually can be handled by one man after it is off the truck. On pumper or hose trucks the collapsible hooks of roof ladders should be carried toward the front; on ladder trucks, where ladders are mounted flat, the hooks should be toward the rear.

WIDTH of sections should be such that where the combination of a roof ladder and an extension are furnished for a pumper or hose truck, the roof ladder will nest or fit entirely inside the fly ladder and not be the same width, as so frequently constructed in the past. The modern arrangement allows the gaining of additional height in extreme emergency by readily lashing, or otherwise fastening, the roof ladder to the fly ladder.

TESTS AND LOADING: Every ladder shall be capable of **easily** withstanding the following tests without undue sag or strain, when set at a good working angle:

A dead weight or load of one man's weight (200 lbs.) every 5 feet or a live or moving load of 200 lbs. every 10 feet.

Each rung, when tested separately, a dead weight at center of 400 lbs.

R. B. CRISWELL

Westchester Chiefs Hear Assistant Chief McKenna

Assistant Chief George L. McKenna, of the New York Fire Department, was the principal speaker at the regular meeting of the Fire Chiefs' Emergency Plan, which was held at Fire Headquarters, Montrose, N. Y., on the evening of Wednesday, April 21, with an attendance of 89. The members were welcomed by Fire Commissioner William Reubsamen and Chief Gillio, of Montrose.

Judge Hoop reported that the so-called "Garrity Bill," which proposed to amend the vehicle traffic law so as to prevent any local regulation of trucks, vehicles or trailers or inspection of such vehicles, had been killed in legislative committee.

There was considerable discussion on the annual dinner, and while there was a strong sentiment in holding it at "Schmidt's Farm," near Scarsdale, the matter was left to the discretion of the committee. It has since been decided to hold the dinner meeting at "Schmidt's Farm" on May 19.

Chief McKenna spoke interestingly on the subject of "Discipline and Training," especially in connection with the New York Fire Department. He said that the schools are designed to make the men capable, so that every move made must be efficient. They are trained in every branch of fire fighting. He spoke of the annex to the probationary school in Long Island City, where the men go through a training period of 60 days, after which they are given 30 days of duty in a fire company. Their minds and bodies are kept active by drill periods in the company school. The men are also thoroughly instructed in the use of all tools used in fire fighting.

Chief McKenna referred to the Motor and Pump Operators' School as the crowning achievement of Chief McElligott. In this school there are classes of 72 men. They are sent before the Medical Board, and if any prove defective, cannot drive apparatus. He gave some statistics descriptive of the New York Fire Department.

There was considerable discussion of Chief McKenna's address and a rising vote of thanks was given him at its conclusion.

The Nominating Committee reported the following nominations:

For President (Renominated)—Deputy Chief Roi B. Woolley, Larchmont.
For First Vice-President (Renominated)—Chief Edward Barth, Elmsford.
For Second Vice-President (Renominated)—Chief Bernard Cropsey, Greenville.
For Third Vice-President (Renominated)—Chief William Livingstone, Tarrytown.
For Secretary—Edward Graff, Village Clerk, Larchmont.
For Treasurer (Renominated)—Assistant Chief Edward H. Siller, Yonkers.
For Directors (One Year)—Chief Fred Langloh, Rye; Chief Thomas Outhouse, Ossining; Chief John Brennan, Pelham Manor, and Fire Commissioner Earl Krows, Hastings.
For Directors (Two Years)—Chief Richard LeVino, Mamaroneck Township; Chief Sheldon Gilleo, Montrose; Chief John J. Reilley, Yonkers, and Chief Rowland Doughty, Briarcliffe.
Sergeant at Arms (Renominated)—Captain Cornelius Falch, Rye.

Refreshments were served at the conclusion of the meeting by the Montrose Department.

Clinton, Ia., Has New Station

Clinton, Ia., opened its new Central Fire Station with a public inspection. Firemen were present to take visitors on a tour through the building. Sandwiches and coffee were served to the guests.

The building is 46 x 104 feet, and was constructed at a cost slightly in excess of $40,000.

The basement holds the heating equipment, coal bins, storage battery room and storage space. On the street floor is the apparatus room, an office, and the repair shop. The second floor has a dormitory, reading room, gymnasium, offices for the Chief and Assistant Chief, kitchen and dining room, toilets, and fire alarm equipment room.

Ladder Truck for Dover, Del.

The Robbins Hose Company, Dover, Del., is awaiting the delivery of a Seagrave aerial ladder. Delivery is expected by September 1, at which time the hose company will be host to the Delaware Volunteer Firemen's Association at the seventeenth annual state convention.

Display board mounted with a few of the more popular items of our large complete line.

Write for catalog. "When you look at a price look at the name that goes with it."

AKRON BRASS MFG. COMPANY, Inc.
WOOSTER, OHIO

COLT FIRE EQUIPMENT

When buying leader line equipment, see us for prices and particulars on Colt Patent Shut-off Nozzles and Quarter Turn Shut-Off Leader Line Siamese Connections.

Cut shows Colt Little Giant Play Pipe with our patented ladder hook feature used with our regular Colt Shut-off Nozzle. Patented April 28, 1936.

We also manufacture Suction Hose Connections, Gate Valves, Chemical Hose Nozzles and Couplings, Siamese Connections and all sizes of Reducers and Nipples.

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Jobbers-Dealers: *Write for Information*

TANNOSPRAY FOR BURNS

THE TANNOSPRAY KIT, for fire department use, is the only self-contained TANNIC ACID unit that is entirely practical for emergency treatment of burns on the scene of the fire.

Non-technical, it can be operated correctly by the layman with fine results.

TANNIC ACID is recognized as being the only thoroughly scientific treatment for burns of both a major and minor nature.

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No obligation, of course.

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EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.

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CAIRNS LOW HEAD—CUSHION LINED **HELMET**

COMFORTABLE AS YOUR OLD FELT HAT; WON'T SHAKE OFF

Never go to a fire without the protection of a good helmet. It may save your life.

DESIGN - - MATERIALS - - CONSTRUCTION
ALL PROVED RIGHT BY YEARS OF ACTUAL USE

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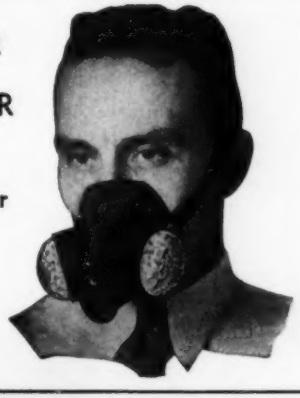
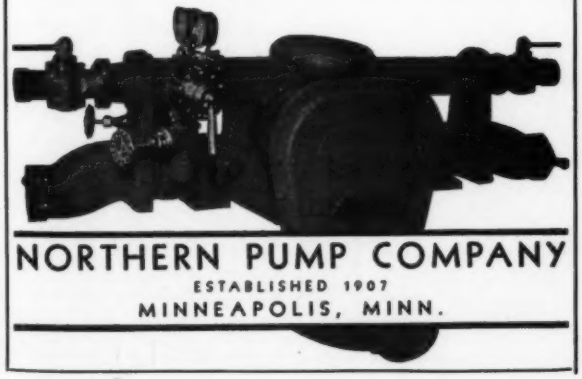
444 LAFAYETTE STREET - Established 1836 - NEW YORK

You'll Feel
A HEAP SAFER
with
COVER'S DUPOR
Two-Sponge
Practical Pocket
Smoke Respirator

$24 Dozen
Sample: $2. postpaid

H. S. COVER
Station A
South Bend, Indiana





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ESTABLISHED 1907
MINNEAPOLIS, MINN.

SOOT BLAST
Puts out chimney fires

Repeat orders prove its value!

5 minutes and a package of SOOT-BLAST, sprinkled over flames at base of chimney, will put out any chimney fire.

Try a case and see!

$4.50
per case
12-26 oz. packages
100-lb. bags $12.50

THE STEBIS CO., Inc., Minneapolis, Minn.

FALSE ALARMS

TRULY YOURS

She had attended a talk given by the Fire Chief during Fire Prevention Week. He told about fires, how they started, how they might be prevented, and the importance to the stability of the home, that insurance be carried for such protection.

The talk found its mark in this case, for the following morning she made a telephone call to an insurance company.

"Hello, is this the Fidelity Insurance Company?"

"Yes, madam."

"Well, I want to arrange to have my husband's fidelity insured."

Schools are like a washing machine. You get out of it just what you put in —but you'd never recognize it.

WRONG PARTY

Mike was a bachelor. That is why, socially, he was popular. Whenever a party was being thrown by one of the boys at Engine 6, the wife of one of the gang would slyly suggest that Mike be invited.

One of the boys had to have a little gathering for his wife's sister, who had arrived from out of town. As usual, it was suggested that Mike be invited. So the husband went out to call the rooming house.

To the maid who answered the phone, he asked, "Is Mike in?"

"Sorry, he's taking a bath."

"My mistake," he replied. "I must have the wrong number."

"Laugh that off," said the fat man's wife, as she sewed his vest button on with wire.

BIT OF STRATEGY

In moving things about, a fireman poked a ladder through a rear window of the station. The officer saw a colored fellow who was a neighborhood character, and asked him to go to a hardware store for a pane of glass.

He said to the clerk, "My boss wants a pane o' glass nine by 'leven."

The clerk thought he would play a joke on the negro.

"Sorry, but we haven't got that size. Will a 'leven by nine pane do?"

"I'll try 'er. Maybe if we slip 'er in sideways nobody'll notice it."

This may be the machine age, but love is still being made by hand.

NO HANDICAP

What could you expect other than what developed, when a new rookie was assigned to a suburban fire station, in a district where there were some rather pretty maids. She was attracted by the uniform, and he by her comely face.

As he was on the day shift and could not get away, she volunteered to get the license, so that they could get married.

But at the Marriage License Bureau, the clerk told her:

"Sorry madam, but licenses are issued only when your form is filled out properly."

She was shocked.

"Why, I like your nerve, sir! We can get married, no matter what I look like."

Worse than raining cats and dogs is hailing taxis.

TIME WAS BRIEF

The fire was out of the ordinary. The blaze was in a manufacturing center, the contents of the building made heavy, black smoke, and the crowds that were attracted presented a huge traffic problem. There were many newspaper men and photographers about.

A camera man anxious to get a good picture, approached rather closely to the fire. A brick that was knocked off the building landed on his head. He jumped about, groaning, and moaning.

A hoseman looked at him with contempt.

"Come, come," he shouted at the photographer. "It couldn't have hurt as much as that. Why it was only on your head for half a second."

There are no bachelor rabbits.

FULLY PAID

He entered the department as a second rate fireman, and if he made good, he would receive a first class rating. The Lieutenant of the company was a hard man to please, and he was constantly berating the new appointee.

Another fellow who thought of joining the department asked the young fireman how much he was paid.

"I get $2,500 a year. I get half of that in cash and the other half in fire prevention advice."

WIDESPREAD

Overheard in the dormitory:

"Did you hear that the Chief has decided to stop smoking."

"Yeh, next thing you know, we'll have to stop."

If every boy in the U. S. could read every girl's mind, the gasoline consumption would drop off fifty per cent.

—Drawing by "Art" Espey

"S'pose that's wot the Chief meant when he said to note all exposure hazards."

Ask for it...

It's FREE

As a reader of FIRE ENGINEERING you are entitled to our buyers' information service free of cost. Here is how it works.

Whenever you are seeking information about any piece of equipment or material that you are planning to buy, first look through the advertisements in this issue. They are your best guide.

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5-37

The PEAK of PROTECTION in a FIREMAN'S GAS MASK

M·S·A
ALL-SERVICE GAS MASK
(BURRELL TYPE)

The ONLY canister-type mask approved by the U. S. Government for protection against combinations of carbon monoxide and ALL other poisonous industrial gases, smoke and fumes. The M. S. A. All-Service Gas Mask is used by more fire departments than any other mask; it is absolutely unequalled in its comfort, ease of adjustment and non-interference with breathing, seeing, hearing and working freedom. ● When equipped with the M. S. A. Speaking Diaphragm (as above) transmission of speech is clear and resonant—permitting use of telephone or speaking-tube. *Write for new Bulletin, and ask us for a practical demonstration.*

MINE SAFETY APPLIANCES COMPANY
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YOUR JOB AND OURS, CHIEF, HAVE ALWAYS BEEN PRETTY MUCH ALIKE

WE'VE both been doing only one thing most of our lives. You've been fighting fires, we've been making fire hose. . . . .

IN THIS PLANT WE DO ONE THING

but we do that exceptionally well. Having originated and spent a lifetime in making wax and para gum treated hose, we know that the hose you get from this plant will give you more service than you would ever expect. Just try it—prove it to yourself.

Chances are both of us know our jobs well. Think of that the next time you buy fire hose. Remember, too, that for years we've been treating the yarn in our hose with wax and para gum to make it last longer. It keeps hose free from mildew, waterproofs it, too. But, don't take our word for it—try a few lengths of it next time you order hose. You'll never buy anything but Fabric after trying it—that's what a lot of chiefs tell us.

WAX AND PARA GUM TREATED

FABRIC FIRE HOSE

The Sole Product of

FABRIC FIRE HOSE COMPANY

SANDY HOOK, CONN.

FOR GREATER PROTECTION TO LIVES AND PROPERTY

EUREKA Multiple Woven 4-ply Fire Hose—heavy duty—four distinct plies—all circular woven —contains smooth interior filler ply—new and improved lap-seam, long-lived rubber lining.

SPECIFY

Eureka—and only Eureka Fire Hose can deliver more pressure with greater safety for longer periods—because—Eureka, and only Eureka—has these four advantages:

(1) Multiple Woven Construction—Eliminates dangerous wriggling, writhing, serpentining under hydraulic pressure.

(2) Smooth Interior Filler Ply—Prevents "washboarding" of rubber lining. Minimizes friction loss.

(3) Bomb-Tested Rubber Lining—Long-lived . . . creates no destructive solutions.

(4) Mildew-Proofing—All fabrics antiseptically treated to prevent mildew and rot.

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Streamlined

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Division of United States Rubber Products, Inc

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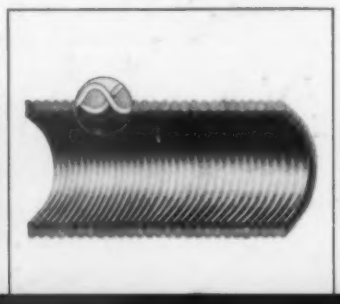
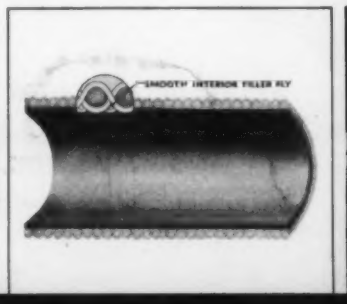
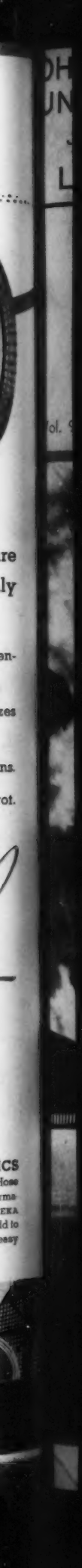
★ **BOMB TESTED RUBBER LININGS**

EUREKA *new* and *better* rubber lining with improved lap-seam . . . 4 plies of specially developed long-lived rubber . . . calendered into one homogeneous body . . . proved far superior by the Bomb Test—a scientific method of predetermining the aging characteristics of rubber goods.

★ **SMOOTH-INTERIOR FILLER-PLY**

An individual set of warp and weft cords that fill in the valleys in the weave of the inner jacket . . . gives the rubber lining a perfectly smooth and level backing . . . no "washboarding" as shown by the illustration at the left—instead, a perfectly smooth waterway (see illustration at right)—assuring minimum friction loss.

★ **MILDEW PROOF FABRICS**

All Fabrics used in EUREKA Fire Hose are antiseptically treated to prevent the formation of mildew and rot. The exclusive EUREKA mildew-repellant solution used does not add to the weight of the hose—is not dirty or greasy or hard to handle—is absolutely reliable.